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THE ADAPTATION OF WAR SURGERY TO CIVILIAN PRACTICE.

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Now that the Great War is over there are presented an opportunity and a duty as well for medical officers to adapt the lessons learned therein to the welfare of their own patients and of the civilian population at large. From that viewpoint I shall make some observations on fifteen month's service in France at Base Hospital No. 36, officially organized as the Detroit College of Medicine and Surgery Unit.

This paper is not pretended to be exhaustive but it will serve, I hope, to stimulate discussion in this meeting and to promote among us the science and art of surgery. In studying this subject and in drawing conclusions the fact of differences and even of contrasts in the character of injuries and diseases under war and peace conditions is understood and due allowances are made therefor.

My observations are founded on those cases that were received at the base referred to, on their conditions and histories brought from other base, evacuation or field hospitals and the front, and on such reports as came back after evacuation from the Vittel Center.

The period of residence varied from one day to several weeks but averaged about 12 days.

There were admitted to Base Hospital No. 36 during its active service 15,097 patients. Of that number 13,564 were American soldiers, 1,464 were allied soldiers and sixty-nine were French civilians. The surgical cases were slightly in excess of the medical. The mortality of all was 143.4172 of the surgical patients were operated on .3879 cases came under my more immediate observation and treatment in Hospital B, an essentially surgical hospital, .23 of that number died, two from pneumonia,

one of which was not postoperative, and four others from extreme conditions of severe wounds and starvation in which they were received as prisoners from German hospitals. Consequently 18 would correctly represent the mortality of cases in that hospital or 2.155 per cent.

FRACTURES.

The total number of fractures treated in the unit was 1405, 199 of them were simple and were distributed as follows:

Astragalus	3
Femur	9
Fibula	44
Hand	16
Humerus	15
Jaw	9
Nasal Bone	8
Os Calcis	2
Patella	4
Rib	10
Radius	27
Tibia	39
Ulna	13

The 1206 compound fractures involved the following:

Clavicle	14
Cranium	39
Fibula	21
Femur	63
Foot	118
Hand	681
Humerus	56
Ilium	12
Jaw	47
Patella	5
Radius	51
Rib	20
Scapula	4
Tibia	58
Ulna	27

Like many other surgeons who went over with an experience in the treatment of fractures in civilian practice I had preconceived opinions, even a prejudice in favor of the operative treatment of many cases and was prepared to prosecute that line, but observation and a little experience soon disillusioned our minds of that idea.

When we went into service French and English medical officers had firmly established the use of splints for such cases. Since so large a proportion of the battle casualties were bone and joint injuries the simplest efficient treatment and transportability of those cases were a *sine qua non* in the war problem.

Accordingly as early as August 20, 1917, General Pershing appointed a Board of American Medical Officers under the Presidency of Colonel W. L. Keller M. C. to investigate the subject and report thereon. That Board recommended the use of the three types of wire ring traction and counter pressure fixation splints, Col. Kellar's modified Thomas splint, the Jones "Cock-up" "Crab" wrist splint, the long interrupted Liston splint with adjustable foot piece, an anterior thigh and leg splint, Hodgen type, the Cabot posterior wire splint, the wire ladder splint material, light splint wood, and plaster of Paris bandages and Bradford frames.

The Board made it clear that it did not dictate the exact line of treatment to be employed in the Base Hospitals but expressed the belief that with such apparatus bone and joint casualties might be efficiently treated at the front and if necessary in base hospitals.

Accordingly in order to be prepared a supply of the various splints and frames was obtained from the Red Cross organization. It was a wise provision for among our first wounded were several fractures of the thigh, leg, arm and fore-arm, which were not only compound and comminuted but also infected with virulent organisms. That was the general character of all fracture cases throughout the war.

As has been insinuated above I had had no hesitancy in recent years to treat difficult fractures by open operative methods. I had even plated several open and infected fractures of the long bones successfully when the more conservative means at hand did not satisfy. The war however produced a different set of conditions. Consequently our treatment of fractures over there was based almost entirely on the use of suitable apparatus, including splints and frames.

All cases of suspected bone injury were examined roentgenologically, manipulated under anesthesia when necessary, rechecked by the X-ray and the open wounds cleaned, drained and dressed p. r. n.

Our records show only three cases of direct treatment. One enclosed patellar fracture was wired and did badly. One tibia with an oblique

fracture was plated after extension proved unsatisfactory. The wound became infected and the patient died of pneumonia. One metacarpal bone was fixed successfully with catgut. All other fractures were handled along the lines indicated and the results were generally satisfactory. Seventy-five amputations were done to save life or to effect more useful members. The list includes:

- 9 amputations of arm
- 9 of feet and toes
- 4 of forearm
- 36 of hands and fingers
- 1 of hip joint
- 8 of leg and
- 8 of thigh.

From my experience I do not discountenance the open operative treatment of selected fractures but do advise against its promiscuous adoption by inexperienced surgeons and recommend strongly the study and use of those methods which war surgery has demonstrated to be safe and effective.

Another element of importance in fracture cases secondary only to a firm union of the fragments is the utility of the member. I believe that the value and necessity of after treatment of fractures in civilian surgery has been often underestimated.

Military surgeons know that their professional services are not ended in such cases until function of joints and muscles has been fully restored or the disability repaired to the highest degree possible. A wounded soldier must be made efficient for Class A work or at least for B or C. Otherwise he becomes a liability of the government. In civilian practice corresponding results should be obtained and more-over in the shortest possible time.

In joint injuries also when bony ankylosis is inevitable the position of ankylosis is important for the patient and should be elected after a careful study of the case. In the army efficiency is the standard and the degree obtained marks the result as good or bad. In civil life the welfare of the patient is the standard of satisfactory or unsatisfactory professional services.

SKULL FRACTURES.

The war brought out some styles of skull fractures and brain injuries that are not displayed in civil life. Tangential extra-dural wounds and depressed extra-dural fractures are common to both. War surgery has taught or at any rate impressed upon us the value of

wound closure in head injuries and also the advantage of sucking or drying of head wounds.

The usual treatment of skull and brain wounds in France consisted of:

First, the excision of the wound of entrance and the removal of bone and splinters, foreign material and devitalized tissue.

Second, the closing of the wound with safety drainage. That technique can be adapted to civilian surgery in many cases.

Contrary to general opinion too it has been observed that shock has not been concomitant with head injuries in the same degree as in chest injuries or severe injuries of the extremities. The unconscious condition of patients who have severe skull injuries seems to obviate that kind of shock which has a psychic basis. Advantage of that fact may be taken to transport such a patient to a hospital or other suitable quarters for further appropriate treatment and recovery.

At Base Hospital No. 36 we had unusual facilities for using and demonstrating the value of fluoroscopy in the removal of foreign bodies as well in the examinations of all gun-shot wounds and fractures and from our experience this article would be remiss if it did not contain the recommendation for more fluoroscopic work in general surgery.

WOUNDS OF THE SOFT TISSUE.

Recent wounds of the soft tissue in military surgery differ from those in civil practice in their character and in their contamination with pathogenic microorganisms.

As a general rule the gun-shot wounds we observed, which were of the average, were characterized by comparatively minor injuries to the skin at the point of entrance and exit of the missiles but by great destruction and devitalization of all proximal subcutaneous tissues. In civil practice on the other hand there are met much contusion and laceration of the skin with less damage beneath.

The second striking feature of all wounds in France and Belgium was their contamination and potential infection with not only the ordinary pathogenic organisms but also the spore-bearing microbes of gas gangrene and tetanus.

Experience soon led to the rule to "Get the wounded man to the casualty clearing station as soon as possible." The study of those cases by French and English medical officers and notably by Carrel served to explain the development of the infection and to indicate subsequent successful treatment.

It was found first that antiseptics alone were of no use and second that nothing short of debridement or thorough excision of all badly damaged tissues and removal of foreign material would avail against serious complications. The packing of such wounds tightly with gauze was practiced for some time but found vicious and abandoned. Small perforation wounds could often be safely closed but the majority of them were lengthened and left open for ample drainage after debridement had been done and Carrel tubes with light packing inserted, which simplified the post-operative treatment. There have been differences in opinions expressed as to the efficacy of the Carrel-Dakin treatment and the use of other antiseptics and methods. I shall not discuss them in this paper, but will only state my opinion that debridement should not be delayed unnecessarily and that the Carrel-Dakin method has with us proven a valuable adjuvant in many bad cases.

If you asked me why wounds so different have been discussed at all I would reply, because of the surgical principles involved and the probability of meeting such cases in later practice.

WOUND CLOSURE.

Wound closure is not new but I venture to state has never been practiced here as much as it was in France. As I have remarked already small clean wounds were closed immediately with primary suture. If the operator hesitated to make a primary closure a delayed primary closure could be done within the following four or five days if the bacteriological report or the surgeon's experience warranted doing so. Later on as soon as the open wound under antiseptic treatment became bacteriologically clean a secondary closure could be made which would coapt the muscular, fascial and cutaneous structures, avoid more than a linear scar and save days or weeks for the patient and hasten his return to duty.

Wound closure is a technical procedure which is adaptable to many cases in civilian surgery. Convalescence can be markedly shortened, deformities from large scars avoided and deep burns treated with more satisfaction to both patient and surgeon.

If war surgery has taught anything it is that old wounds, and discharging sinuses can be cured scientifically like recent wounds. They have been the "bete noir" of every surgeon's practice. They have been neglected and relegated to the care of internes and orderlies to

the exclusion of so-called major surgery. We have returned from France with a healthy respect for those cases and with feelings of great satisfaction when we have discharged them cured. They require appropriate surgery and antisepsis to enable them to heal. Major surgeons should no longer condemn them.

SHOCK AND COLLAPSE.

With the exception of differences in exposure to cold, wet and hunger the same conditions of shock and collapse are found and their causes operate here as they did in France. We met shock frequently. The anemic variety predominated in Base Hospitals. The psychic form was more prevalent forward. In all there was lack of bodily heat and the power to produce it. Otherwise the treatment was contrasted. The psychic state demands rest while the anemic condition requires stimulation by warm fluids intravenously, subcutaneously, per rectum or by mouth. We saw several cases of it due to secondary hemorrhage and combated it best with intravenous transfusion of blood. Blood has been found far superior to other fluids since it offers not only volume but also the physiological advantages of serum and corpuscles.

We used the indirect method of administration exclusively, preventing coagulation by the citrate of soda solution in the container. It is recommended for use in civilian practice as a simplified procedure and one by which the amount of blood taken and given can be accurately determined.

Anesthesia was a great boon to the wounded soldier. His confidence in the medical officer was absolute and touching. Anesthesia contributed to that splendid relationship.

In Base Hospital No. 36 novocaine was used considerably in minor and dental surgery. It was used also in head injuries in the field hospitals. Chloroform was seldom used alone. Ether was the *sine qua non*.

In the summer of 1918 there was developed a rapid induction anesthesia based on the idea of the DePage mixture used in the French clinics. The formula was modified by and used under the supervision of Captain Arthur E. Guedel, who was in charge of anesthetics in the Vittel Center. It consisted of:

Ether	24 cc
Chloroform	1/2 cc
Ethyl Chloride	5 1/2 cc
Oil of Orange	1/8 cc

That quantity, approximately one ounce, was the average dose and was administered on cotton within a rubber mask which encircled and covered the patient's face. The anesthetic state was produced in two minutes, could be continued from twelve to twenty minutes and the patient awakened in two minutes after the mask was removed. It was useful for debridements, foreign body removals and other short operations. With us it proved to be an effective and safe anesthetic even in the hands of nurses and operating room orderlies who administered it in several hundred cases. We therefore regarded it as safe and it was unquestionably a great time saver. Patients awakened from it quickly and without nausea and in some instances left the table without the aid of a stretcher.

I feel no hesitancy in recommending it for short operations in civilian surgery.

DISCUSSION.

DEAN LEWIS, Fort Sheridan, Ill.: I was very much interested in Dr. Walker's paper, because I think that there is one thing that has been demonstrated in this war and that is, that fractures can be treated by simple methods of continued flexion and Thomas splints and good results obtained. It has also been demonstrated that the Lane plate is a rather dangerous factor in the treatment of fractures, because really I believe there are fewer cases of non-union in war surgery than in the same number of cases treated in civil surgery, and that is due to the fact that no operation has been performed, such as the insertion of a Lane plate. I think the operative treatment of fractures should be reserved for those cases in which reduction cannot be made or maintained in any other way. That limits the operative treatment of fractures. I will speak later of the fractures which we see in the reconstruction period. The deformities which we see are those in fractures of the femur just below the lesser trochanter and fractures of the femur just above the condyles, a supracondylar fracture. In treating the cases continued traction with splints, such as the Thomas splint, is the best. In these fractures which we see in the construction work the Hodgein splint is the most satisfactory means of treatment that I know of.

DR. G. C. HAFFORD, Albion: I want to say one word about the Thomas splint. I do not see why we have not used it before. It is so simple and covers so many multiple fractures of the thigh and lower limb. It is so simple and more comfortable to the patient and so much easier to apply than plaster-of-Paris. It is hard to obtain, however. I ordered some and waited six weeks before I got them. If you have a little idea of them, you can go into a carpenter shop and make one. In the course of War Surgery which I took at the University of Pennsylvania they put us four days in a factory making splints.

Dr. Walker spoke of transfusion of blood. I want to know if he made the agglutination test. I would also like to know if he had any experience with Dichloramine-T. I believe that Dichloramine-T has the place that is claimed by Carrel-Dakin solution. Carrel-Dakin has a great many disadvantages. Those who attended the Carrel-Dakin place in New York became quite enthusiastic about it. Afterwards when they attended the place where they used Dichloramine-T they lost a great deal of their enthusiasm. Not, that it is not what it is claimed to be, but there is a disadvantage in its use. First, it requires so much constant attention, so much time, and so much care. It has to be used in the proper variety of wounds, as Dr. McLean said yesterday. In wounds near blood vessels it will cause hemorrhage. In empyema cases where you have an infected process, it is liable to cause trouble. You have to change your Carrel-Dakin solution every hour in order to get the best results. You have the skin outside of the wound wet with the Carrel-Dakin solution. These are some of the things that we cannot handle as well in private practice as we could in the wards of the Army. With Dichloramine-T

you only change the dressing every 24 hours. You do not have it slopping over on the bed and you get just as good results.

The paraffin mesh that was spoken of yesterday can be used with Dichloramine-T in suppurating wounds and it is wonderful. It comes off easy. I think both of these solutions have their place. I think there is a definite use for each one and when we speak of Carrel-Dakin solution I think we ought not to forget Dichloramine-T and use it. I remember one case where a man was shot through the chest, the bullet coming out through the back and through the pericardium. Now that was a pretty hard case to handle but we determined to do the best we could. We closed up the wound and used Dichloramine-T and got a good result. In wounds of the hands and arms we did not have infection as with the other solution. With a spindle-point syringe we were able to get the Dichloramine-T down into the wounds pretty well, and in cases of this type we had no serious infection.

DR. H. E. RANDALL, Flint: In this way it seems to me that the war has taught us many things about surgery of the extremities. Heretofore we have paid greater attention to abdominal work. In this war the preservation of function of the soldier has been observed and I think we were taught a great many things; especially in industrial life these lessons can be applied.

I want to recommend to you Jones' little book on "Notes on Military Surgery." I think every surgeon should read it and know it.

The treatment of fractures in the Army was so simplified and the results were so wonderful that it is surprising to me in getting back that the splint is not used more in this country. The Thomas splint and the Jones splint I am sure you will all be using in a short time. They are so simple that I rather think in a few years we will find these splints in factories just the same as you now find oxygen tanks. The little book that was given out by the Red Cross people in France and sent to every officer in the A. E. F., I think should be published in this country by, say, the Journal of the American Medical Association, and sent to every member of the Association.

SOME PRACTICAL POINTS ABOUT EYE, EAR AND NOSE WORK.

CHAS. H. BAKER, M.D.

BAY CITY, MICH.

In preparing this paper I had in mind the fact that we are all given to doing things in a routine way, which, so far as it conserves our energies, is a good thing, except as it tends to get us into ruts and make us adhere to procedures which are not always the best possible.

It is a good rule that a person will do best to follow the practice and use the instrument with which he is familiar until convinced that there is a better plan or tool.

In the hope that the discussion of this paper will bring out some helpful suggestions, I am led to group a number of subjects which have no other necessary connection than that they occur in the day's work and we may not always be satisfied with the results we have been getting.

Chalazion, styne and blepharitis marginalis are allied diseases of microbic origin, the predisposing cause of which is an uncorrected error of refraction, a fact which is often overlooked.

Continued eyestrain from errors of refraction produces chronic congestion of the ocular and

periocular tissues, which finally weakens their resistance and encourages the invasion of microbic life. If uncorrected, the refractive error keeps up the congestion, thus preventing the cure of the inflammation which under appropriate treatment would otherwise subside.

Local treatment directed to the microbic origin will usually check these cases for a time, but, if at all severe, they are bound to recur and only refraction, done under complete mydriasis, and insistence on the continuous wearing of glasses will bring permanent cure.

With the increase in the wearing of glasses there seems to be a corresponding decrease in the number of severe cases of blepharitis that I see and I can attribute to no other cause. I will grant that the most of cases of uncorrected eye strain do not have blepharitis but neither does every patient with bad tonsils have arthritis.

GLAUCOMA.

Another disease which I see far less often is glaucoma and I am coming to think that the spread of good refraction work with the corresponding decrease in ciliary strain is the cause of its disappearance.

Is it not a fair presumption, in the absence of any generally accepted cause for glaucoma, that the constant congestion of the ciliary region from eyestrain gradually develops a low grade of inflammatory action sufficient to block the canal of Schlemm?

Occurring, as glaucoma does, during and after middle life is a natural sequence of a continuous ciliary strain on tissues which are normally losing their elasticity. Other factors undoubtedly contribute their share in causing glaucoma, just as in the case of blepharitis, but as the increase of good refracting is the only change in causes, which were not before in existence, that applies to practically all persons, it would seem a fair conclusion to draw.

Fashion rules in medicine as in clothes and certain drugs get an undeserved popularity which finally fails them and they are put in the discard.

ARGYROL.

A case in point I think is the use of argyrol by the men in general practice for almost every inflammatory disorder in the eye.

I have watched for good effects from its use and have about decided that it is just as useful and little more so than any other harmless salt when used in an isotonic solution, its value

being to wash away secretions as any of them will do.

Argyrol has this to recommend it, it is an excellent placebo, for it keeps the patient busy removing the stain and makes him think something is being done.

CORNEAL ULCER.

Corneal ulcer is very trying to one's patience and we are often tempted to apply chemical caustics in the hope of destroying the germs which are causing the disease.

These are apt to increase the irritation and instead of benefiting the patients will usually delay their recovery. One basic principle should govern in the management of corneal ulcer and that is to cause as little irritation as possible.

The single exception to the rule is the thorough use of the galvanocautery in all cases of pneumococcus ulcer, for no other treatment will give so good results, with so little resultant scar, as the free use of the electric cautery as early as possible.

DIONIN.

One of the best remedies to use in obstinate corneal ulcer is dionin, both for its analgesic quality and because the chemosis and oedema caused are much the same in effect as a Bier's hyperaemia. I give the patient a saturated solution for home use and dust the dry powder into the eye when treating him myself.

TRACHOMA.

One disease which in the days of the Lumberjack used to be common in my vicinity was trachoma, and I have seen many good men fail in its treatment, falling far behind the results possible of attainment.

For many years I have cured clinically all my cases of trachoma on the average in the period of three weeks and have permanent cures in that time in a large percentage of them.

Under anesthesia, preferably general. I begin treatment by slitting the trachoma bodies open with a multiple knife and then expressing their contents with either Knapp's roller forceps or the forceps devised by Noyes, then scrub the raw surface well with a solution of bichloride, one to three hundred strong.

On the following day I use the solution in strength of one to six hundred and continue this strength daily to the end of the treatment.

If one has never used this strength he may fear too much reaction but the fact is that this is not very irritating and there is no caustic

action to be noticed. Following the first curettage cold compresses are useful for several hours but in subsequent treatments they do not need to be used longer than a few minutes. If in the course of the treatment any bluish gray granules are found buried below the conjunctival surface they are split and curetted.

When the patient is discharged he is told to return at stated times for inspection, the conjunctiva is well looked over for buried granules and if found these are at once put through the same course as before.

DACHRYOCYSTITIS.

In dachryocystitis removal of the tear sac or window resection through the nasal wall have been popular methods but not one in a hundred of these operations is necessary.

About 1905 Dr. Irwin of Ohio, presented a method of treatment based on the division of urethral stricture, and showed a flexible shaft knife for the division of the stricture.

His plan was suggested by the one which was used in the treatment of urethral stricture by stellate division and the frequent passing of large bougies to prevent reformation of the circular band.

Under cocaine anesthesia the lower canaliculus and the entrance to the lachrymal sac are incised with the canaliculus knife and the flexible shaft knife is then crowded through the stricture.

Withdrawing the knife through the stricture after rotating it 90 degrees it is turned again and pushed through the stricture; turned again and brought out.

Then the largest Theobald probe the bony wall will carry is passed and left in situ for three or four minutes. The probe will vary from twelve to twenty in number or two to four millimeters in diameter.

For the first three to six days the same sized probe is passed and after that, one size smaller until the end, which is usually within three weeks. The first week I probe daily, the next every other day, and the third according to indications. Occasional probing two to six months apart insures patency. Except in children and undersized adults I rarely get down to as small as No. 12 Bowman probe.

CATARACT.

Although, in an uncomplicated case, the operation of cataract is about the simplest and easiest operation we are called upon to perform I suppose the method of operation and care of

the patient afterwards will be discussed and fought over to the end of the chapter, as long in fact as men practice ocular surgery.

From the days of couching, down to those of the latest disciple of extraction in the capsule by the Smith method, the removal of cataract has been looked upon as the acme of surgical skill and many are the plans and legion the instruments devised for its successful accomplishment.

I believe the simplest operation with the fewest necessary instruments and the least subsequent manipulation of the patient will give the best results. Twenty-five years ago Dr. Hermann Knapp described the ideal operation both from the standpoint of ease of accomplishment, beauty and uniformity of result and percentage of recovery of useful vision.

Without iridectomy, with the incision encircling one-half of the cornea, and division of the capsule well back under the iris with the triangular capsule knife, the lens is delivered by pressure on the cornea with the spatula at a point half way from the apex to the uncut sclero-corneal junction directly towards the center of the globe. If the lens hangs back, its passage through the pupil can be assisted by traction on the pupillary margin with the blunt hook.

Any soft lens matter remaining in the pupil after delivery of the lens can be stroked out with the spatula applied over the cornea or scooped out with the sterile scoop.

The iris is commonly incarcerated in the angle of the wound at this stage and should be released with the probe.

Before the operation I wipe the entire conjunctiva with a solution of bichloride one part in six hundred, which causes no irritation that the patient will complain about. After operation the eye is dressed with a pad of absorbent cotton inclosed in a single thickness of gauze and held in place with adhesive.

Both eyes are bandaged and if no irritation or pain is complained of the dressings are not touched until the third day.

Since adopting the preliminary mopping of the conjunctiva with the strong bichloride, I have not had a single case of infection severe enough to give me a moment's uneasiness.

The patient is kept as quiet as possible the first twenty-four hours and after that is allowed to shift position from back to side at will.

When the eye is dressed on the third day the bandage is removed from the sound eye and not replaced. If there is no particular reason for

keeping the patient in bed he sits up on the fourth day and is dressed the next.

The room is not darkened more than enough to prevent glare and one could read in it at any time in the daytime. No solution except a little boric acid and cocaine is used in the eye after the operation unless iritis occurs, when atropine is added. Patients leave the hospital in from seven to sixteen days and because of the comparative freedom which they enjoy and absence of restraint they are contented and I have yet to see my first case of postoperative mania develop.

Since I adopted extraction without iridectomy as the operation of choice I lose vitreous less often and in smaller amounts, have better looking eyes with better average vision, and, in several eyes, have saved the vision which with an iridectomy I am convinced would have been lost.

MASTOID.

Doubtless most of you look upon the simple operation for mastoid suppuration as I do, as only a little more elaborate form of opening a boil.

I always start my mastoid operation with a liberal opening of the drum membrane and remove only the cells down to the tip and the antrum unless the case has gone on to extensive breaking down of the bone cells.

If temperature, pulse and general condition seem satisfactory I do not remove the dressings after the operation until the third day, when I usually pull out the iodoform gauze with which the wound is packed and insert a loose wick of the same to draw away whatever pus may form.

The wound is never irrigated but is wiped dry with absorbent cotton and if after granulation is well under way there is a sudden increase of discharge I wipe the entire wound with dichloramine-T in chlorazene which promptly alters and lessens the secretion. As soon as granulations begin to crowd into the wick opening and the pus to be more like mucus in appearance I leave out the wick and if, as usually happens, there is a diminution in the secretion and the wound looking better it is allowed to close. By this plan I have been able to materially shorten the time required in healing and do not have the deep disfiguring scars, with plastic operations needed to close them up, which I have seen some men have.

In closing I would like to mention a little wrinkle in the removal of tonsils which I have

used to control the hemorrhage on one side while I worked upon the other.

When one tonsil is out or dissected down ready for the snare with which I always complete their removal I wad up a bunch of absorbent cotton large enough to fill the fossa and crowd it in the space previously occupied by the tonsil and leave it there. The action of the palate muscles will hold it tightly without sutures or forceps and leave the mouth unobstructed for the balance of the operation.

It controls the hemorrhage almost as well as the clamp and is far less in the way.

DIAGNOSIS OF DISEASES CAUSING GASTRIC DISTURBANCES.*

A. O. HART, M.D.

Considered surgically, a reasonably exact diagnosis, especially in diseases of the upper abdomen, is of paramount importance, as operative treatment is too serious a procedure to be undertaken, except with such a degree of knowledge of the condition to be remedied, as to insure a reasonable certainty of relief or cure.

A great many patients, coming to the surgeon as well as to the physician, have the common complaint of distress, pain or other uncomfortable feeling in the stomach, "dyspepsia or indigestion," as they term it, and a history, when taken, shows that many of them have been treated for a more or less prolonged period of time and with little or no permanent benefit. They go from one doctor to another in an effort to obtain the desired relief. The application of modern scientific methods in diagnosis will clear up most of the cases but this is not by any means always done.

This is oftentimes due to the lack on the part of the investigator, of a comprehensive knowledge of the many and varied causes, which may operate to produce a very nearly common train of complaints, or, to the superficial observer, the same symptoms, especially in the upper abdomen.

Fundamentally we may consider chronic gastric disturbances to be caused mainly by about four different classes of disease; constitutional diseases, reflex or local diseases in other organs; local diseases of the stomach and various functional disorders or diseases.

Such constitutional diseases as diabetis, nephritis, tuberculosis, heart disease, the anemias, leukemia, syphilis and its resulting complica-

tions, (one of the most important of which is locomotor ataxia) arteriosclerosis, and many others, may be present as their most prominent symptom, "dyspepsia," in the various forms.

Reflex diseases, such as chronic gall bladder infection, diseases of the liver, chronic appendicitis, various diseases or infection of the lower bowel, contracture of the anal sphincter, abnormal conditions of the uterus or appendages and more rarely, stone in the kidney or ureter, may be the cause of stomach distress.

Local diseases of the stomach, as causes of "dyspepsia" are practically confined to ulcer and their results, and cancer with rare cases of local lesions due to syphilis, tuberculosis other infectious agents or to foreign bodies. Gastropexia or displaced stomach, has been considered in the past as a frequent cause of such troubles, but we now believe it to be more often a result rather than a cause.

Functional diseases, such as neurasthenia and allied disorders, habits deleterious to health, such as taking opium, cocaine or alcohol to excess, irregular meals, improper food and excess of all kinds oftentimes induce distressing stomach symptoms, without definite pathological lesions being present.

This is merely an outline of some of the causes of "dyspepsia," so-called, and points to the necessity of a thorough, accurate and careful examination, both physical and laboratory, preceded by a complete history from the beginning to the present. Graham, in one of his papers on differential diagnosis between gall bladder infections, ulcer of the stomach or duodenum and chronic appendicitis, has shown that from a carefully taken history alone, a very accurate diagnosis can be made in many of these cases. A few of the important points which he emphasizes are the exact relation of the pain to the taking of food, length of attacks, intervals between, exciting causes, and the methods of relief. Inquiry into the condition of previous health is very important and may point very directly to the cause of present trouble. Inquiry into the habits and the bringing out of every possible fact which may have a bearing on the case is useful.

Complete physical examination, to be followed by a laboratory analysis of blood, urine, gastric contents, feces and sputa, if any, should precede the X-ray examination which is of greatest value when taken in connection with all the other facts brought out previously. I have gone through the history of 200 cases which my as-

*Read before Clinton County Medical Society, Aug. 7, 1919.

sociates and I have examined and treated within the past two years and in which the chief complaint of the patient was gastric distress or pain. I have taken these cases just as they came from the cross file but have not included any cases in which the diagnosis was not confirmed either by operation, treatment and prolonged observation or post-mortem.

I find as follows: Sixty were due to chronic appendicitis, 41 to gall bladder or duct infection, 2 to chronic pancreatitis, 51 ulcer of the stomach or duodenum and resulting conditions, 2 to cirrhosis of the liver, 4 chronic nephritis, 5 diabetis, 4 tuberculosis of the lungs, 6 cancer of the stomach or liver, 6 to anemia, 5 to heart disease, 2 locomotor ataxia, 2 to contraction of sphincter and resulting constipation, 1 to stone in the ureter, 3 to adhesions from former operations, 6 to neurasthenia, or were the result of improper habits or dissipation. There is no doubt that upon further investigation I could have found other cases wherein the cause of stomach symptoms was due to some of the diseases enumerated.

All of the cases of chronic appendicitis, infection of gall bladder or duct, 50 per cent. of the ulcer cases, and many of the other cases were operated. All the cancer cases were either operated or were later autopsied. A considerable number of the cases, however, could only have the diagnosis confirmed by prolonged observation and by the results of treatment and, in those proving fatal, a post-mortem.

In some such as the tubercular cases, the diagnosis was confirmed by finding tubercle bacilli in the sputa. My conclusions from a study of the various writers along this line, various reports, and our own experience, is that there is in nearly every case of so-called dyspepsia, a definite pathological lesion, and that no physician or surgeon should be satisfied until every effort has been made to find out in each and every case what that lesion is, for it is only by so doing that permanent benefit can be obtained by medical and especially by surgical treatment. Of course it is understood that there is always a certain percentage of cases of this character in which the most thorough examination, by all methods known at present, will not reveal with any certainty the underlying pathology or cause, which still remains obscure. In such cases the treatment, if medical, must remain symptomatic or empirical and if surgical be exploratory in nature.

The various methods used in the diagnosis of

these diseases are well known, and are in constant use among physicians and surgeons, and it is unnecessary at this time to dwell upon them, and while constantly improving, their value and also their limitations are obvious. I desire again to emphasize the necessity in all cases where a diagnosis is to be made, that a full knowledge of the various and manifold cases of stomach symptoms shall be kept in mind in order that nothing shall be overlooked in arriving at an accurate decision as to the underlying cause in as many cases as possible. Diagnosis must come before treatment especially surgical, and it is only by so doing that it is possible to plan a rational and therefore successful treatment in the great majority of cases of this character.

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BRAIN INJURIES.*

LEO DRETZKA, M.D.

DETROIT, MICH.

From the history of medicine we find that skull surgery dates back to prehistoric times; we gather also that good results were obtained in trephining even at that early period. And after a hasty review of the progress made in cranial surgery from that ancient time up to our present day, one is apt to draw the conclusion that the advance made does not coincide with the length of time elapsed; and especially does this seem true when we realize that we are still viewing the question of operative interference in certain classes of brain injuries with an attitude of indecision. But the progress made during the period of the world war alone, in diagnosis and treatment, with a resultant lowered mortality rate, is sufficient to offset any discouragement we may feel over the seeming lack of practical and constructive knowledge gained during certain periods of the past.

During the years of 1915-16 and 17 a total of 398 cases of skull injuries came under my observation, and I treated 210 cases out of this number; the mortality rate was 30 per cent.; 132 of the cases required operative interference;

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and from 70 to 80 of the fractures of the vault involved the base as well.

Injuries of the brain, more than any other traumatic condition, require the immediate as well as the constant attention of the surgeon.

It is possible to have a fracture of the skull without an injury to the brain, and vice versa, but an injury severe enough to fracture the cranium usually does some damage to the brain itself. Certain general symptoms occur, no matter what the injury, as impairment of consciousness, vertigo, nausea, vomiting and headache.

Fractures of the vault are due, as a rule, to a direct injury, such as a blow on the head, a fall, a stab, or a bullet. In most instances the skull will be depressed at the site of injury and the underlying brain impaired. If the fracture cannot be palpated through an open wound the scalp should be incised. The most constant general symptom is loss of consciousness; the focal symptoms depend upon the part of the brain injured. If the motor area be involved, convulsions or paralysis of the opposite side of the body will follow. A frontal lobe injury does not exhibit distinct symptoms.

A case in point is that of a man admitted to the hospital in October, 1915, who had had his head badly smashed against a telegraph pole while he was looking over the side of a speeding motorcar. The examination showed him to be unconscious and bleeding freely from an extensive laceration over the left eyebrow; there was a depressed fracture in the left frontal parietal region, extending through the orbit, and the eyeball was lacerated; temperature was 97, pulse 84. Immediate operation followed, making an elliptical incision on the left side, over depression, and removing a small triangular fragment of bone; the frontal lobe was severely lacerated, allowing about a tablespoonful of brain substance to escape; bleeding vessels were ligated; depressed bones elevated, and wound closed. In reacting from the operation the patient was restless and irrational; his pulse rose to 104, his temperature to 101; but within six days the patient had regained consciousness, and his injured eyeball was enucleated eight days later. At the end of four weeks he was discharged from the hospital, and he reported to me one year later in good condition.

If the parietal area is affected, symptoms will be manifest on the opposite side of the body, and the occipital lobes will exhibit a hemianopsia on the other side. Fractures of the base may involve the vault as well, and vice versa. The accompanying symptoms are bleeding from the mouth, nose and ears; respiration may be stertorous; pulse slow and weak; temperature is

usually elevated—in critical cases it may reach 108; the pupillary reaction is an important symptom, the pupil is frequently dilated on the side of the injury; there may be bulging of the eyes, often one more pronounced than the other, and subcutaneous ecchymosis. The blood pressure is likely to be normal at the first reading, so only the second and third readings are of importance. Spinal puncture reveals blood in basal fractures, and may be used as a means to lessen the pressure. Choked disc is present when intra-cranial pressure exists, and is an index to increasing pressure. In nearly all cases some of the cranial nerves will be involved; and of these the optic, sixth, seventh and eighth cranial nerves are most commonly the seat of injury.

DIFFERENTIAL DIAGNOSIS.

In industrial and hospital practise, cases of unconsciousness without a distinct history are common. It is necessary, therefore, to distinguish the unconsciousness of brain injury from a comatose condition, which may be the result of either alcoholic intoxication, apoplexy, epilepsy, uremia, hysteria, diabetes, or opium poisoning. The alcoholic breath has been the cause of many blunders in diagnosis. A patient suffering from anyone of the above conditions may have indulged in alcohol, or received it as a stimulant before arriving at the hospital. There are many instances of patients being discharged by examining surgeons as alcoholics, or locked in police stations as drunks, only to be discovered several hours later suffering with a fractured skull.

We are now confronted with the problem of treatment and the question of whether or not an operation is necessary. Every case of brain injury requiring operation, and every suspected case of brain injury, should be subjected to repeated examination, and if signs of increased intra-cranial pressure should appear, then an operation should be performed immediately. Operative interference is imperative in all cases of depressed fractures; of compound and simple fractures, with evident symptoms of hemorrhage or intra-cranial pressure; and basal fractures with symptoms of increasing pressure.

There are two periods when operative interference is contra-indicated: first, when there is severe shock, and second, when the medullary collapse is inevitable. If at all possible, every case of skull injury should be X-rayed, as

unsuspected fracture lines are then often determined. Apparently trivial cases, without immediate symptoms, disclose linear or depressed fractures, or fractures of the inner table only. If the depression is definitely localized and not extensive, a vertical incision will suffice, and the operative hemastasis will be simple, and the attachment of the temporal muscle to the parietal crest is left intact.

When it is desired to expose a large area of the brain, an osteoplastic flap, with pericranium and scalp intact, is desirable. A constant stream of warm saline solution will keep the operative field clean and washes away clots and fragments of bone, and aids in locating the source of hemorrhage. The most frequent source of hemorrhage is, of course, from the middle meningeal artery, or its anterior or posterior branch. If the dura is contused the edges are excised.

The bone edges are treated in like manner; foreign bodies imbedded in brain tissue, and accessible, should be removed by direct extraction, or with the aid of a magnet, provided, of course, that this can be done without severe injury to the tissue; the tract or wound is mechanically cleansed, and is then ready for closure.

Dr. Cushing advocates the use of a rubber catheter, attached to a suction apparatus, for cleansing out a tract and removing fragments and devitalized brain tissue; and the injection of dichloramine-T where the bacteriological examination indicates.

In the event of blood welling up into the operative field from some part which cannot be reached with a ligature, the area is packed with gauze, which may be removed within twenty-four hours; this condition is frequent in fractures which involve the vault and base. If the dura is intact and there is no pulsation, it is incised to relieve the sub-dural pressure and, if possible, to determine its cause. No drainage should be inserted in the brain, unless we are concerned with an abscess cavity.

When we have the final reports and statistics on brain injuries, and their treatment, covering the period of the world war, they will, I believe, undoubtedly impress upon us, amongst other things, the importance of early operative interference in cases of brain injuries.

EPIDEMIC CEREBROSPINAL MENINGITIS AT CAMP JACKSON, S. C.

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The first case of cerebrospinal meningitis at Camp Jackson, S. C., was diagnosed Nov. 15, 1917. The disease assumed the character of an epidemic during December, and January and February of the year following.

PREDISPOSING FACTORS.

The rapid spread of this disease through the camp was due to the following predisposing circumstances:

1. The unusual cold weather with sudden, marked temperature changes during the later fall and winter of 1917-18, to which the majority of men were not accustomed, and which caused a widespread nasopharyngeal catarrh, bronchitis, mumps and measles.

Tables 1, 2, 3 and 4 give the weather conditions during the months of November, December, 1917, and January and February of the year following.

2. The general condition of the camp, which was not completed until the end of the winter. The facilities for heating the buildings were especially retarded. To keep warm, the men would stay indoors, crowding the barracks, thus coming into closer contact with those suffering from nasopharyngeal inflammations.

The majority of the barracks rooms were heated by one large furnace, the size of a hot air furnace used for heating houses. Usually two such furnaces were installed in the center of the two rooms on the ground floor. As there were no pipes for the distribution of the heat throughout the building, during spells of cold weather the men would congregate around these furnaces, thus offering every advantage for the spread of respiratory infections.

3. The base hospital was not completed, and while every attempt was made to accommodate all, the problem became more involved, because white and negro patients had to be kept separate.

4. The laboratory facilities were meager. The function of the base hospital laboratory as a public health laboratory for the entire camp had not been taken into consideration in the plans of the hospital. This was corrected during the later part of January both as regards space and equipment.

5. The transfer of troops from one can-

tonment to another. By this means new foci of infection were introduced, and the problem of coping with the condition present complicated. The following cases are illustrative of this:

(a). Nov. 18, 1917. D. S., Pvt., Co. 21, 156 D. B. from Camp Pike, Little Rock, Ark., taken from train directly to hospital, diag. C. S. M.

(b). F. M., Pvt., Co. 23, 156 D. B. from Camp Pike, Little Rock, Ark., arrived at Camp Jackson Nov. 17, 1917; admitted to Base Hosp., C. S. M. No. 21, 1917.

(c). P. B., Pvt., Co. 15, 156 D. B. from Camp Gordon, Atlanta, arrived at Camp Jackson, S. C., Nov. 5, 1917. Admitted to Base Hosp. as C. S. M. Suspect, Nov. 8, 1917; diagnosis pos. C. S. M., Nov. 10, 1917.

(d). W. F. F., Pvt., Co. 21, 156 D. B. from Camp Pike, Little Rock, Ark., arrived at Camp Jackson, S. C., Dec. 1, 1917; diagnosis C. S. M.

BACTERIOLOGY.

While it is highly probable that local inflammation of the nasopharynx may be caused by the meningococcus before its invasion becomes general, its exact etiologic significance in relation to the inflammation of the respiratory passages is still doubtful, for its presence on the inflamed naso-pharyngeal membrane may be accidental. The absence of marked inflammation of the naso-pharyngeal membranes in some cases of meningitis throughout the entire course of the disease further support this view. The assumption that the meningococcus reaches the meninges from the nasopharynx by way of the cribriform plate of the ethmoid is also questionable in view of the findings of Westenhoffer, Von Lingelsheim and Meyer, which indicate that if direct extension does occur, its course is through the sphenoid bones, the sinuses of which were found inflamed in 34 per cent. of cases examined.

That the meningococcus produces a local inflammation before invading the general system may be assumed until further data are available. From the nasopharynx the organism invades the blood current, either directly, causing a meningococcus bacteremia with secondary localization in the meninges, or by a direct infection through the lymphatics, as pointed out by Westenhoffer, who observed the constant enlargement of the cervical lymph glands.

That this disease may at times be a generalized infection has been shown by Solomon, Moller, Bettencourt, Franc, and Elsner, who have in isolated instances succeeded in culturing the meningococcus from the blood. Elsner succeeded in isolating the organism in 25 per cent.

of cases. Routine blood cultures on twenty-three patients, meningitis suspects, taken on admission to the base hospital, Camp Jackson, S. C., gave positive cultures in 36.6 per cent.¹ As pointed out these cultures were obtained in many instances before the diagnosis of cerebrospinal meningitis was established and before meningeal symptoms were noticeable.

All the strains of meningococci isolated either from the nasopharynx spinal fluid, blood and secondary foci were typed. In all instances were we dealing with a meningococcus of the regular type.

TABLE I.

Weather conditions during the month of November, 1917, as given by:

U. S. Department of Agriculture
Weather Bureau.
C. F. Marvin, Chief.

Date	Temperature			Precipitation in inches and hundredths	Character of day
	Highest	Lowest	Mean		
1	58	38	48	.00	Clear
2	55	38	46	.00	Clear
3	57	32	44	.00	Clear
4	60	39	50	.00	Clear
5	60	36	48	.00	Clear
6	67	34	50	.00	Clear
7	75	43	59	.00	Clear
8	67	44	56	.00	Clear
9	71	40	56	.00	Clear
10	71	42	56	.00	Clear
11	73	43	58	.00	Clear
12	71	46	58	T.	Pt. Cloudy
13	63	51	57	.52	Cloudy
14	55	49	52	.02	Cloudy
15	64	45	54	.00	Clear
16	62	44	53	.00	Pt. Cloudy
17	66	36	51	.00	Clear
18	71	45	58	.00	Clear
19	73	47	60	.00	Clear
20	54	46	50	.08	Cloudy
21	68	49	58	.00	Clear
22	67	49	58	.00	Clear
23	54	38	46	.00	Pt. Cloudy
24	45	32	38	.00	Pt. Cloudy
25	46	26	36	.00	Clear
26	50	26	38	.00	Clear
27	55	34	44	.00	Clear
28	62	39	50	.00	Cloudy
29	65	52	58	.21	Cloudy
30	55	48	52	.09	Cloudy

WEATHER.

Number of clear days, 20; partly cloudy, 4; cloudy, 6; on which 0.01 inch, or more, of precipitation occurred, 5.
Mean relative humidity: 8 a. m., 81.7 per cent.; 8 p. m., 36.6 per cent.; monthly, 59.2 per cent.

Hail	13
Sleet	0
Fog, slight	15, 30
Fog, dense	29, 30
Thunderstorms	13
Frost, light	2
Frost, heavy	1
Frost, killing	3

1. Cultivation of the meningococcus intracellularis (Weichselbaum) from the blood. Baeslack, F. W.; Bunce, A. H.; Brunelle, G. C.; Fleming, J. S.; Klugh, G. F.; McLean, E. H.; Solomon, A. V. Jour. Am. Med. Asso., 1918, 70, 684.

TABLE II.

Weather conditions during the month of December, 1917, as given by:

U. S. Department of Agriculture
Weather Bureau.
C. F. Marvin, Chief.

Date	Temperature		Precipitation in inches and hundredths	Character of day
	Highest	Lowest		
1	65	45	.55	Clear
2	70	43	.00	Clear
3	72	51	.00	Pt. Cloudy
4	71	56	.17	Pt. Cloudy
5	59	44	.01	Cloudy
6	45	38	T.	Cloudy
7	52	31	.42	Clear
8	61	30	.46	Pt. Cloudy
9	31	20	.26	Clear
10	32	22	.27	Clear
11	35	19	.03	Pt. Cloudy
12	31	25	.28	Cloudy
13	28	24	.26	Cloudy
14	38	20	.29	Pt. Cloudy
15	34	22	.28	Clear
16	30	25	.28	Cloudy
17	38	26	.32	Clear
18	34	31	.32	Cloudy
19	44	33	.38	Cloudy
20	49	35	.42	Pt. Cloudy
21	61	30	.46	Clear
22	52	34	.43	Pt. Cloudy
23	48	30	.39	Clear
24	61	29	.45	Clear
25	64	4	.52	Cloudy
26	53	51	.42	Cloudy
27	34	25	.30	Cloudy
28	50	30	.40	Clear
29	39	18	.28	Cloudy
30	22	8	.15	Clear
31	21	12	.08	Cloudy

WEATHER.

Number of clear days 12; partly cloudy, 7; cloudy, 12; on which 0.01 inch, or more, of precipitation occurred, 11.

Mean relative humidity: 8 a. m., 80.7 per cent.; 8 p. m., 64.5 per cent.; monthly, 72.6 per cent.

Sleet	11, 12, 13
Fog, slight	14
Fog, dense	1
Thunderstorms	0
Frost, light	—
Frost, heavy	—
Frost, killing	—

TABLE III.

Weather conditions during the month of January, 1918, as given by:

U. S. Department of Agriculture
Weather Bureau.
C. F. Marvin, Chief.

Date	Temperature		Precipitation in inches and hundredths	Character of day
	Highest	Lowest		
1	29	6	.18	Clear
2	34	26	.30	Cloudy
3	30	15	.22	Clear
4	38	13	.26	Pt. Cloudy
5	52	31	.42	Cloudy
6	54	42	.48	Cloudy
7	53	31	.42	Clear
8	42	26	.34	Clear
9	44	30	.37	Cloudy
10	50	25	.38	Clear
11	64	30	.47	Cloudy
12	51	15	.33	Clear
13	31	10	.20	Clear
14	52	22	.37	Pt. Cloudy
15	57	34	.46	Clear
16	51	30	.40	Cloudy
17	51	31	.41	Clear
18	43	28	.36	Clear

Date	Temperature		Mean	Precipitation in inches and hundredths	Character of day
	Highest	Lowest			
19	41	24	.32	.00	Clear
20	40	31	.36	.08	Cloudy
21	35	26	.30	.37	Cloudy
22	39	27	.33	T.	Cloudy
23	44	25	.34	.00	Clear
24	49	27	.38	.00	Clear
25	63	39	.51	.00	Clear
26	65	41	.53	.00	Pt. Cloudy
27	71	57	.64	.00	Cloudy
28	63	39	.51	.34	Cloudy
29	54	39	.46	.03	Cloudy
30	47	35	.41	.17	Cloudy
31	42	33	.38	.02	Cloudy

WEATHER.

Number of clear days, 14; partly cloudy, 3; cloudy, 14; on which 0.01 inch, or more, of precipitation occurred, 11.

Mean relative humidity: 8 a. m., 78.2 per cent.; 8 p. m., 66.2 per cent.; monthly 72.2 per cent.

Hail	0
Sleet	20
Fog, slight	28, 29
Fog, dense	0
Thunderstorms	11
Frost, light	—
Frost, heavy	—
Frost, killing	—

TABLE IV.

Weather conditions during the month of February, 1918, as given by:

U. S. Department of Agriculture
Weather Bureau.
C. F. Marvin, Chief.

Date	Temperature		Mean	Precipitation in inches and hundredths	Character of day
	Highest	Lowest			
1	40	35	.38	T.	Cloudy
2	39	36	.38	.56	Cloudy
3	57	39	.48	.26	Cloudy
4	45	31	.38	.00	Clear
5	41	25	.33	.00	Pt. Cloudy
6	58	25	.42	.00	Clear
7	67	48	.58	.00	Pt. Cloudy
8	74	45	.60	.00	Clear
9	73	52	.62	.03	Pt. Cloudy
10	69	55	.62	.00	Clear
11	74	43	.58	.00	Clear
12	73	50	.62	.22	Cloudy
13	74	60	.67	.00	Pt. Cloudy
14	76	53	.64	T.	Pt. Cloudy
15	77	62	.70	.00	Pt. Cloudy
16	63	43	.53	.21	Cloudy
17	59	47	.53	.02	Cloudy
18	49	38	.44	.06	Cloudy
19	72	44	.58	.01	Cloudy
20	67	52	.60	.05	Cloudy
21	52	38	.45	.00	Pt. Cloudy
22	55	36	.46	T.	Cloudy
23	58	36	.47	.00	Clear
24	70	43	.56	.00	Pt. Cloudy
25	74	58	.66	.00	Pt. Cloudy
26	70	51	.60	.00	Clear
27	72	39	.56	.00	Clear
28	81	51	.66	.00	Clear

WEATHER.

Number of clear days, 9; partly cloudy, 9; cloudy, 10; on which 0.01 inch, or more, of precipitation occurred, 9.

Mean relative humidity: 8 a. m., 79.4 per cent.; 8 p. m., 57.6 per cent.; monthly, 68.5 per cent.

Sleet	0
Fog, light	1, 8, 12, 27, 28
Fog, dense	0
Thunderstorms	16
Frost, light	—
Frost, heavy	—
Frost, killing	—

While generally cerebrospinal meningitis is diagnosed from the symptoms resulting from meningeal irritation, there is observable in many cases a premeningeal stage of the disease which varies in time from several days to a few hours, and is characterized by general septic symptoms, as chills, fever, malaise, lack of appetite, indefinite pains in the joints and muscles. The headache observed in this stage is probably due to increased amounts of cerebrospinal fluid which on lumbar puncture is found clear, containing no organisms or only a few free meningococci which may be explained by the general sepsis. The cytology of the fluid may be negative or may show a slight increase in lymphocytes. The Globulin test may be negative or faintly positive. Fehling's solution is reduced. The essential impression gained from the examination of the fluid during this stage of the disease is not that of meningitis, but rather that due to a general toxemia.

STAGES OF INVOLVEMENT.

The stage of meningeal involvement has been variously subdivided according to severity of the disease, its symptom complex and probable prognosis.

This general bacteremia leads to widely scattered foci of infection in the body, of which that of the meninges is the most commonly observed. The following cases are illustrative of the metastatic involvement of other regions of the body than the meninges:

1. Pvt. J. M. F., aged 25, admitted Jan. 5, 1918, was in poor condition; there were marked tremor, and cyanosis of the lips and finger tips. The provisional diagnosis was bronchitis following measles, Jan. 11; broncho-pneumonia developed. The patient died Jan. 15. Cultures of pus found at necropsy, in the sphenoid sinus, gave a gram-negative diplococcus, which was identified as a meningococcus of the regular type.

2. S. R., Pvt., aged 23, admitted Nov. 15, 1918, complained of cold and pain in chest, and pain in the eyes and back. The provisional diagnosis was measles. Nov. 24, bronchitis developed in the left side. Nov. 28, there was pleurisy on the left side. Next day the diagnosis of broncho-pneumonia was made. Jan. 15, 1918, an intercostal incision for left emphysema was made and a large amount of slightly cloudy serous fluid removed. A meningococcus of the regular type was isolated from it.

3. Chas., Pvt., 156 D. B., Co. 19, was admitted as meningitis suspect. One lumbar puncture made, examination of spinal fluid negative. Patient developed mumps, and was transferred from wards for meningitis cases to that for mumps. To determine whether patient had had meningococcic infection, sample of blood was obtained.

The serum from this blood agglutinated a strain of meningococcus of the regular type up to 1:320 dilution.

4. Miss M., Nurse, reported on sick list, diagnosis articular rheumatism, which did not yield to usual treatment. On suggestion of the Chief of the Laboratory, a blood culture was taken, disclosing a gram-negative diplococcus, which was identified as a meningococcus of the regular type. Patient was put on antimeningococcic serum treatment, receiving it intravenously, and recovered promptly.

These instances clearly show that the meningococcus is distributed by the blood stream, giving rise to lesions wherever conditions are favorable, without necessarily involving the meninges. To the same mechanism of distribution may be credited the complications and sequelae incident to this disease, as involvement of the joints, pleurisy, pericarditis, ophthalmitis, etc.

COMPLICATIONS.

The thirty-one autopsies performed during the height of the epidemic gave further evidence of the generalized nature of the meningococcus infection. The following gross lesions were recorded in the number of cases indicated:

Petechiae	11
Purpura	10
Pleurisy	8
Pneumonia, Lobar	2
Pneumonia, Broncho	8
Congestion of the lung	7
Hypertrophy of heart	1
Dilation of heart	1
Endocarditis, vegetative	1
Pericarditis, fibropurulent	4
Pericarditis, seropurulent	4
Spleen, enlarged	22
Kidneys, cloudy swelling	10
Kidneys, congestion	10
Purulent exudate in vertex	7
Purulent exudate in base	3
Purulent exudate in vertex and base ..	16
Purulent exudate in parietal region ..	5

While diffuse purpuric spots are absent on the serous surfaces, petechiae were frequently observed on these membranes of the pericardium and peritoneum. It may be assumed that cerebrospinal meningitis is in more instances than has been supposed a bacteremia, co-existent with or followed by the formation of metastatic foci due to the distribution of the meningococcus by the blood stream.

This assumption is based on the following considerations:

1. The demonstration of the meningococcus in blood cultures in a larger percentage of cases than heretofore.

2. The presence of a distinct premeningeal stage of the disease.

3. The occurrence of lesions due to the meningococcus in parts other than the meninges.

4. The autopsy findings, with special reference to the occurrence of petechiae and purpuric spots.

Based on these observations the intravenous serum therapy in large doses was recommended by us to Major W. W. Herrick the Chief of the Medical Service.² The agglutinating titer of most antimeningococcic sera lies between 1:800 to 1:1000. It will be seen that fairly large quantities of serum must be administered intravenously to have the therapeutic agent in sufficient concentration to act upon the meningococci present in the blood stream.

STATISTICS.

Two hundred and fourteen meningitis patients from 97 organizations were admitted to the base hospital. Out of this number 65 died, 88 were returned to duty shortly after dismissal from the hospital, 57 requiring additional time for complete recuperation; 4 were discharged; 2 cases recurred.

Twenty-eight of the patients were city residents before entry into the National Army, 159 were rural, the residence of 27 could not be determined.

PROPHYLAXIS.

The prophylactic measures instituted consisted of:

(a) The isolation of those complaining of symptoms observed in the premeningeal stage of the disease.

(b) The placing of the organization in quarantine.

(c) Preventing the men from congregating in the barracks.

(d) Alternating the position of the cots.

(e) Culturing the quarantined personnel 3 or more times at 5 day intervals, or until no more carriers could be found.

(f) Culturing all patients on admission to the hospital and segregating those found to be carriers in the hospital.

(g) The culturing of all applying for leave of absence from the camp.

(h) The isolation and treatment of the carriers in the carrier camp.

The vigilance exercised by the regimental surgeons in isolating those complaining of headache, malaise, chill, indefinite pains in muscles and joints combined with inflammation

of the respiratory tract, made possible the prompt treatment of meningitis patients, while still in the early stages of the disease.

The extent of the quarantine was determined by the number of men the suspected case had come into contact with, just previous to his illness. Depending on this a single squad room, or barrack or the entire organization would be placed under the quarantine.

The infecting organism of cerebrospinal meningitis gains access to the respiratory passages by the inhalation of the fine spray droplets produced in the act of sneezing and coughing. The large number of men suffering from coryza, pharyngitis and bronchitis would aid materially in spreading the meningococcus infection in crowded rooms, provided contacts and carriers were among them. Hence the men were kept out of doors as much as possible, and the seating in the Mess rooms was so arranged that the men occupied alternate seats. Crowding the barracks wherever it occurred was relieved, and the cots so arranged that no two men slept side by side with the heads in the same direction, but alternating.

BACTERIAL DIAGNOSIS.

As soon as diagnosis was established by the laboratory, name, rank and organization were reported to the office of the Division Surgeon. All contacts were quarantined and arrangements made for the taking of cultures. A list of those quarantined, made in triplicate, was furnished the culturing team, consisting of three physicians detailed to this duty by the Division Surgeon.

This team would obtain the necessary number of blood-agar plates, pack them into a fireless cooker and visit the organization for culturing. The plates were numbered and the corresponding number entered next to the name on the rosters prepared. The cultures and rosters were delivered at the laboratory, and on conclusion of the examination those found to be carriers were entered as positive on the lists, one of which was forwarded to the office of the Division Surgeon, one to the organization, the third being retained at the office of the laboratory for record.

The cultures were incubated for 18-24 hours, examined and transplants of suspicious colonies made by three members of the Laboratory staff. Agglutination tests were made on all suspicious cultures. The media used consisted of laked blood, 1 per cent. glucose-agar.

At first the West tube was used for taking

2. For a discussion of the intravenous serum treatment of cerebrospinal meningitis and the results obtained, the reader is referred to the article by W. W. Herrick, Major, M. R. C. The intravenous serum treatment of Epidemic Cerebrospinal Meningitis. Arch. Int. Med. Vol. XXI, 1918, p. 541.

cultures; this, however, was found impracticable owing to the large number of cultures which had to be taken daily and to the time required for cleaning, refitting, and sterilizing these tubes. Our next method of taking cultures was by means of sterilized wooden applicators. A small pledget of cotton wound on the end of these applicators permitted the culturing through the nose, thus reaching the posterior nasopharyngeal wall. The last method employed by us consisted of applicators made from No. 18 stove wire. The wire is cut up into 8-10 inch lengths, a loop is bent on one end, and the other end hammered flat so that cotton wound around this end will hold. Five of the applicators are placed into a heavy walled test tube, plugged and sterilized. When ready for culturing, the wire is bent on the edge of the test tube to an angle of approximately 60 degrees, one and one-half inches from the end holding the cotton. By burning off the cotton and straightening out the wire it may again be prepared for use. The reduced expense and saving of time, as well as the ease with which cultures can be taken recommend its use.

The culturing was done in a convenient room which had been washed and cleaned previously. A table and chair for the clerk, a pail and a chair so placed that the person to be cultured faces the light are all the furniture necessary. One man at the time is allowed to come into the room to prevent crowding. The tongue is depressed with a wooden tongue depressor and the culture taken by introducing the wire applicator well up the posterior portion of the nasopharynx, first on one side of the uvula and then on the other.

The applicator is withdrawn without touching the oral cavity and the culture plate inoculated, and the inoculated material evenly spread with a platinum wire.

The fireless cooker keeps the plates and cultures at constant temperature until placed in the incubator.

Owing to shortage in glassware we were compelled at first to put three cultures on each plate. This number was later reduced to two, as more petri dishes were available.

The agglutinations were carried out with one or two polyvalent-sera, diluted 1:200 and normal horse serum diluted 1:50. All strains of meningococci isolated either from the spinal fluid, blood, or nasopharynx as well as those obtained from exudates of patients were typed. All strains thus examined were of the "regular"

type. The type sera used were furnished by the Army medical school.

ISOLATION.

Upon notification from the laboratory, the men found to be carriers were isolated in the carrier camp, established by orders of the Division surgeon. Here a card index was kept of the date of entry, number of cultures taken and the results of the culture. Three negative cultures obtained in succession at from 3 to 5 day intervals, were required before discharge from the carrier camp.

TREATMENT.

The treatment of the carriers consisted in periodical spraying of the upper air passages with Dichloramine-T. Treatment was discontinued at least 18 hours before culturing.

During the period from December 18, 1917, until March 7, 1918, 520 carriers were isolated and treated in the carrier camp. Of this number six developed cerebrospinal meningitis.

The number of cultures taken from organizations during the months indicated are as follows:

Dec., 1917...	4873	Carriers isolated	176—3.6 %
Jan., 1918...	11825	Carriers isolated	293—2.47%
Feb., 1918...	2480	Carriers isolated	51—2.06%

In all 97 organizations were involved in this epidemic. Of this number 59 were cultured, 38 were not cultured, since in the latter, one case only of cerebrospinal meningitis appeared. In addition 22 organizations were cultured for the purpose of removing the carriers before cases could develop.

Aside from the cultures taken in organizations and the Carrier Camp, it was thought advisable to culture all patients at the time of admission to the hospital. This measure was instituted to prevent the spread of meningitis to other than meningitis wards of the hospital by isolating patients who were carriers of the meningococcus. As soon as the patient was admitted through the receiving ward, he was, if able to walk, brought to the laboratory where the culture was taken, if unable to walk, the culture was taken at the receiving ward. From 75 to 125 cultures were thus taken daily at the laboratory. This number includes also those who desired leave of absence. A statement that bearer had been cultured and found negative was required before permission to leave the camp was granted.

The spread of cerebrospinal meningitis is mainly due to the carriers, who, under certain

conditions, such as inflammation of the upper respiratory tract, harbor the meningococcus in a more or less virulent form. The co-existence of measles, coryza and bronchitis with cerebrospinal meningitis is more than accidental, playing an important role in the infectivity of the meningococcus, and the establishing new foci of the disease. The removal of the carriers is usually followed by a decrease in the incidence of the disease.

Of the organizations affected through cerebrospinal meningitis 29 were also affected with measles, 10 with mumps, 7 with pneumonia, 2 with influenza, while bronchitis was fairly prevalent throughout the camp.

While the removal of the healthy carrier is of great importance in controlling the spread of the disease, little definite knowledge has been gained as to the best methods for freeing the carrier of the meningococcus. The use of the dichloramine-T spray as well as other antiseptic solutions no doubt eliminate the organism for a time, so that it is impossible to detect them by culture. Sooner or later, however, when the preventive spraying is discontinued, the meningococcus may again be recovered from the nasopharynx by culture. The following culture record illustrates this:

F. L. K., Pvt., Hdq. Co., 318 F. A., Dec. 24, 1917, pos. Dec. 31, neg. Jan. 7, neg. released from carrier camp, found again pos. Feb. 13, 1918, and readmitted to carrier camp.

The duration of the period of incubation has been variously placed by the different observers. Wright placed this period from one to ten days, Sophian from one to five. Our observations are in accordance with those of Wright in the Glasgow epidemic, as the following cases indicate:

1. Z. L., Sgt., Hdq. Co., 323 Inf., worked in office with B. A. who was cultured, found positive Jan. 16, 1918, and removed to the carrier camp the same date. Z. was admitted to the Base Hosp. Jan. 25, diag. Fever undetermined. Diag. C. S. M. established Jan. 26. The period of incubation in this instance is nine days.

2. L. F. R., Pvt., Remount Depot, admitted to Hosp., Jan. 25, 1918, diagnosis influenza. On the same date diagnosis C. S. M. was established. This patient boasted of having slipped by the sentry for the purpose of visiting the 317 M. G. Bat., Co. B. about one week before his admission. On Jan. 20, McK. of the 317 M. G. B. Bat., Co. B, was admitted to the Base Hospital, diag. C. S. M. In this instance the period of incubation was about 5 days.

3. That the incubation period may be still

shorter is indicated by the following case: C. T. B., Pvt., Co. 13, 156 D. B., cultured Jan. 11, found neg., recultured Jan. 13, a gram-neg. Diplococcus, morphologically meningococcus was isolated. The organism did not agglutinate. Jan. 14, C was admitted to the Base Hospital, diag. Fever undetermined. Diag. C. S. M. established Jan. 15, 1918. The probable period of incubation in this case is two days.

The onset of the symptoms probably marks the time when the meningococcus gains entrance into the system from the nasopharynx, where it has existed from time of infection.

The small percentage of carriers who contracted the disease raised the question as to their immunity to the organism they harbored. The problem had a wider application, for if there existed a demonstrable immune body in the serum of the carrier, an immunity might possibly be induced by the use of suspensions of killed meningococci in healthy individuals as a prophylactic measure.

It became apparent that results of the agglutination experiments depended in a large measure upon the strain of meningococci used. The suspensions of meningococci used for agglutinations were made from hemolysed blood glucose agar slants. The growth was washed off with salt solution, the suspension filtered through gauze and placed into the incubator at 56 degrees C. for several hours to destroy the bacteriolytic ferment.

The agglutinations were also incubated at this temperature.

TABLE V.

Name	Dilution			Salt Sol.
	1:10	1:20	1:40	1:80
1. W. B.	—	—	—	—
2. B. Th.	—	—	—	—
3. P. G. W.	—	—	—	—
4. G. H.	—	—	—	—
5. F. W.	—	—	—	—
6. F. J.	—	—	—	—
7. Max Chr.	—	—	—	—
8. B. W. G.	—	—	—	—
9. J. H.	—	—	—	—
10. McA. J. M.	—	—	—	—
11. F. C. F.	—	—	—	—
12. D. E.	—	—	—	—
13. Th. C.	—	—	—	—
Rockefeller Poly. S. ++	++	++	++	++

The sera were obtained Jan. 16, 1918, from the carriers indicated above. The agglutination test was run Jan. 18, the sera having been kept in the refrigerator in the interim. Strain used is that of Carrier No. 1 of this table, isolated from the naso-pharynx. This carrier was isolated Dec. 24, 1917, and kept in the carrier

camp on account of repeated positive cultures, for at least four months.

Six sera obtained from patients admitted to the base hospital for suspected meningitis gave also negative agglutination reaction.

In view of the negative findings in the above experiment strain No. 5 isolated from the spinal fluid Dec. 15, 1917, was chosen, because this strain had been under transplantation for one month.

Table 6 indicates the results of this experiment.

TABLE VI.

Name	Dilution of serum			Salt. Sol. Control
	1:10	1:20	1:40	
1. W. B.	—	—	—	—
2. B. Th.	—	—	—	—
3. B. G. W.	—	—	—	—
4. G. H.	—	—	—	—
5. F. W.	—	—	—	—
6. F. J.	—	—	—	—
7. M. Ch.	—	—	—	—
8. B. W.	—	—	—	—
9. J. H.	—	—	—	—
10. McA. J. M.	++	++	+	—
11. F. C. F.	++	++	+	—
12. D. E.	—	—	—	—
13. Th. C.	++	++	+	—
Rockefeller Poly. S.	++	++	++	—

The sera of the six admissions to the hospital giving negative reaction with the carrier strain B. W., gave the following reactions with strain No. 5:

1. McC. Ph.	++	++	+	—
2. H. C. J.	++	++	+	—
3. Brady	++	++	+	—
4. Berry	++	—	—	—
5. F.	++	++	+	—
6. P. A.	++	++	+	—

The agglutinations in table 6 were carried out Jan. 19, 1918, with the same sera as used for the previous experiment (Table 5). The positive findings in three of the carriers would indicate that the results obtainable are dependent on the strain of meningococcus used in preparing the suspension for agglutination.

In all 160 sera of carriers from the Carrier Camp were tested by agglutination with strains No. 5 and No. 168 obtained from the spinal fluid. Aside from the three positive agglutinations of Carriers Nos. 10, 11, 13 of Table 6 no additional sera of carriers agglutinated either of the above strains. In comparing our results with those of F. L. Gates,³ it seems possible that our initial dilution of the sera (1:10) was too high.

To determine whether agglutinations occurred in the blood of cerebrospinal meningitis patients early in the disease blood was obtained from the following cases on admission and agglutinations carried out with No. 5 and 168.

3. Jour. of Exp. Med. Vol. VIII, No. 4, pp. 449-474. Oct. 1, 1918.

TABLE VII.

Name	Organization	Date of obtaining serum	1-22-18 Strain 168	1-24-18 Strain 5
			0	0
1. H. Thos. C., 323 Inf., Supply Co.		1-19-18	0	0
2. R. Jos., 316 M. G. Bat., Co. B., ..		1-19-18	0	1:20
3. B. B. L., 324 Inf., Co. M.		1-20-18	0	1:40
4. S. McK., 317 M. G. Bat., Co. B.		1-20-18	0	0
5. C. Chas., 156 D. B., Co. 19		1-20-18	1:320	1:320
6. Th. R. L., 156 D. B., Co. 20		1-21-18	0	0
7. A. J. H., 317 F. A., Bat. D.		1-22-18	0	1:20
8. L. M., 306 Eng., Co. D.		1-21-18	0	0
9. H. F., 322 Inf., Co. D.		1-22-18	0	1:40
10. D. S., 156 D. B., Co. 23		1-22-18	0	0
R. Polyv. S.			1:400+	1:400+

Patients 6 and 7 were carriers and were admitted to the hospital from the Carrier Camp on the dates their sera were taken. The sera of these patients gave no agglutination except in one instance (5) when strain 168 was used while agglutinins were demonstrable in one-half the number of sera used when a strain of meningococci was used which agglutinated readily. Aside from the polyvalent serum and salt solution controls a normal horse serum control was used in all agglutination experiments. Case 2, although giving an agglutination of 1:20 with strain No. 5 died from the disease. The lowest serum dilution employed was 1:10. It is probable that a greater number of sera might have given agglutinations in still lower dilution.

In view of the findings in these cases on admission, it seemed advisable to determine whether the agglutinins increased during the course of the disease. The results of the agglutination on treated patients are indicated in Table 8.

TABLE VIII.

Initials	Organization	Date of admission to Hosp.	Diag. made in Lab.	No. of Jan. 19, 1918 in Hosp.	Jan. 19, 1918 strain	
					No. B.W.	No. 5
1. G. S., 316 F. A., Bat. D.		12-24-17	12-25-17	26	1:40	1:40
2. Th. F., 156 D. B., Co. 13		12-11-17	12-11-17	39	1:20	1:40
3. A. L., 316 F. A., Bat. A.		12-14-17	12-15-17	36	0	1:40
4. B. Th., 371 Inf., Co. C.		12-16-17	12-16-17	34	0	1:40
5. D. R., 316 F. A., Bat. A.		1- 6-18	1- 6-18	13	0	1:40
6. A. Cl., 156 D. B., Co. 15		12-29-17	12-30-17	21	—	—

Jan. 22, 1918 No. 168	Jan. 24 No. 5	Nature of treatment.
1. 1:80	1:320	Intraspinal only.
2. 1:40	1:320	Intravenously, large amounts.
3. 1:320	1:160	Intraspinal only.
4. 1:40	1:320	Intraspinal only.
5. 0	1:320	Intravenously, large amounts.
6. 0	1:80	Intravenously, large amounts.

Cases 2, 5 and 6 received average or small amounts of antimeningococcic serum intraspinally. These patients were classified as severe cases of meningitis. The production of agglutinins in the blood of the patient appears to increase during the course of the disease. That this increase in agglutinins is not entirely

due to the agglutinins introduced with the therapeutic serum is demonstrated by the findings in the blood of patients 1, 3 and 4, who were treated intraspinal only, the amount of serum given hardly exceeding 40-50 c. cm. at any one treatment while patients 2, 5, and 6 received from 100-125 c.cm. of serum at one time. That the agglutinins are formed by the patient was brought out in the agglutination test with the serum of case 3 C. Ch. Pvt., 156 D. B., Co. 19, whose serum agglutinated both strains No. 5 and 168 in a dilution of 1:320. This patient, a meningitis suspect, received no serum treatment, because the laboratory findings of his spinal fluid were negative.

We were unable to demonstrate agglutinins in the spinal fluids of a large number of patients, both during their period of active treatment and after their spinal fluid had become free of organisms, and the pathological excess of cells.

Aside from a few cases of cerebrospinal meningitis among the civil population of Columbia, S. C., who for one reason or another could not be transferred to the Base Hospital, Camp Jackson, the majority of civilian patients received their initial treatment at Columbia and were then transferred to the Base Hospital. It is of interest to note that not all the civilian patients thus admitted suffered from cerebrospinal meningitis traceable to contact with enlisted personnel or the proximity of the camp to the city. For one of these, a negro, became ill with cerebrospinal meningitis while serving an extended term in jail, the other, Hayward Trezevant, admitted Jan. 31, 1918, had never been near the camp and had just arrived from Ft. Mott.

The prophylactic measures taken by the Board of Health of the city consisted in the prompt isolation of all suspicious cases and those who had been in contact with them. The later were cultured for meningococci of the naso-pharynx and kept under quarantine until found free. Public schools, churches and places of popular amusement were closed and the use of street cars by children discouraged for about six weeks during the height of the epidemic. Throughout the epidemic there was the closest co-operation between the Division Surgeon and the health authorities of the city and state. The

prophylactic measures agreed upon for those desiring to visit the city have been indicated in the earlier part of this communication.

I take pleasure in acknowledging the assistance given me by Drs. A. H. Bunce, G. C. Brunelle, J. S. Fleming, G. F. Klugh, E. H. McLean and A. V. Solomon, members of the laboratory Staff, Base Hospital, Camp Jackson, S. C.

MICHIGAN TRUDEAU SOCIETY.

RESOLUTION ON THE DEATH OF

DR. V. C. VAUGHAN, JR.

The death of the late Doctor V. C. Vaughan, Junior, of Detroit removes from the Michigan Trudeau Society one of its charter members. The loss is a great one to our Society, to the City and State, and to the medical profession at large.

Be it resolved, therefore, that we deeply mourn his death and extend our sympathy to the various members of his bereaved family; that we request that these resolutions and the accompanying biographical sketch by Doctor Guy L. Kiefer be spread upon our minutes and printed in the *Michigan State Medical Journal*; and that a copy be sent to the members of his family and to each member of this society.

TUBERCULOSIS WORK.

Previous to the year 1905 the tuberculosis work of the Detroit Board of Health was confined to an attempt to educate the public in the need of preventive measures. So-called "non-spitting signs" were placed in street cars and other public places forbidding spitting as a general precautionary measure. Pamphlets along similar lines were printed and distributed and knowledge of the disease and its method of spread was disseminated in various ways—through articles in the daily newspapers, in medical and public health journals, and by means of public lectures whenever such were possible.

FIRST T. B. CLINIC.

In the fall of 1905, a new departure was inaugurated—The first "Tuberculosis Clinic" was at that time established in Detroit. A new force entered into the work, a new personality, Dr.

V. C. Vaughan, Jr. Sincerely devoted to his work, charitable and kindly disposed to the afflicted poor and conscientious to a fault in the performance of public duty, Dr. V. C. Vaughan, Jr., took charge of this department and the success of the Board of Health's efforts for the prevention and restriction of the great white plague was assured. The clinic was open daily, except Sundays, from 5 to 6 in the afternoon with Dr. Vaughan in attendance. Here the patients were examined and advised in the prevention of the disease and in the care of their individual case. The homes of the patients were visited by nurses from the Visiting Nurses Association and the members of the family instructed in the details of the prevention of tuberculosis. Each house was provided with one or more folders on "How to Prevent Consumption" and "How to Cure Consumption." The beginning was difficult. It was early in the campaign against tuberculosis, and not only the people at large but even the physicians were not keen in their support. By untiring efforts and everlasting perseverance Dr. Vaughan succeeded in getting patients to apply for advice. The first comers were consumptives in the advanced stage of the disease, almost unable to climb the stairs that lead to the clinic. The kind treatment and careful examination that they always received at the hands of the physician, lead them to tell their friends and acquaintances about it and the opportunity for the Board of Health to reach the public was established. In the summer of 1906 the Exhibit of the National Association for the Study and Prevention of Tuberculosis was brought to Detroit. While the Exhibit was being shown at the Museum of Art, daily from July 30th to August 5th, interesting and instructive lectures on the prevention of tuberculosis were given every evening by speakers from various parts of the country. A large committee of local physicians had charge of this undertaking but Dr. Vaughan was again the moving spirit. Thousands of people visited the exhibit and heard the lectures, and the interest in the prevention of tuberculosis received a new impetus.

Today, when such large appropriations are being allowed for preventive measures, it will be interesting to note that during the year 1907, the sum of \$600 was appropriated to be used as a fund for furnishing food (proper). The amount was increased \$1,200 the following year.

TENT HOUSE ERECTED.

After the tuberculosis clinic had been established a comparatively short time, the need of hospital or sanatorium facilities for some of the patients, became very apparent. Consequently in the winter of 1908, the open air treatment of tuberculosis was begun under the auspices of the Detroit Board of Health. A tent house was

erected on the grounds of the old smallpox hospital on Hamilton Boulevard (part of the grounds now occupied by the Herman Kiefer hospital), and the first patient was taken there for treatment on February 21st. It was a bitter cold winter day as I well remember because I accompanied Dr. Vaughan to call on his first city hospital patient. The consumptive had been living in a couple of dark dingy rooms in a tenement on Congress street east and it was difficult for our nurses to persuade him to open a window at "home" where he sat beside the kitchen stove. After his first night in the open, the patient told Dr. Vaughan that it was the first night he had slept well in months. When the patient was returned to "his apartments," somewhat improved in health, he took the windows out altogether as he said he could not breathe in that stuffy place.

The small tuberculosis sanatorium grew by the addition of another tent house donated by the Tau Beta Alumnae Association shortly after the start had been made. The Tau Beta girls not only presented the tent to the city but paid an amount sufficient for the care of one patient annually for several years. At this point allow me to quote from the report of the health officer for the year 1907-1908:

"It is the intention to keep patients about two months, teach them every detail in the prevention of the disease, give them the best possible care and food during their stay at the hospital and then send them out trained consumptives who will be willing and able to preach the gospel of the prevention and cure of tuberculosis to their friends and acquaintances. If we can in the course of a year increase our facilities so as to admit fifty cases into our training school hospital at one time and change the patients every two months we will be able to educate 300 consumptives a year. In our clinic we will reach at least 300 more who will be given instructions by the physician and nurse in charge. In this way we would be instructing 600 patients a year in the methods of preventing the spread of tuberculosis, and in a comparatively short time our campaign of education will have reached every consumptive in the city of Detroit and the results obtained should then be manifest in the decrease of the number of cases and the reduction of the mortality."

Dr. Vaughan was always strong for this training school as was the health officer with whom he worked so faithfully—but unfortunately the plan did not work out because so many of the patients remain for too long a time and are so far advanced that they can not be taken back to the insanitary houses from which they are usually brought.

In the fall of 1908, six additional tent houses were erected and the north wing of the old building which stood on the grounds, unoccupied, was remodeled and arranged for an administration building and an open air ward for the reception of nine patients. By putting two patients in each tent house, the total capacity was now raised to 25 patients.

One of these tent houses was the gift of Mr. Adolph Finsterwald in memory of his wife, Eva Finsterwald. The generous donor also paid the expense of the care of one patient annually for a number of years.

RED CROSS COTTAGE.

Before the end of the fiscal year of 1908-1909, the Michigan Branch of the National Red Cross Society presented the Detroit Board of Health with most of the proceeds obtained from the sale of "Christmas Stamps" and an open air cottage for the care of eight patients and nurses' apartment was erected and is known as the "Red Cross Cottage." A similar cottage was donated by the Detroit Society for the Study and Prevention of Tuberculosis and is known as "The Blue Star Cottage." All of these improvements have changed the Sanatorium from a single tent house with accommodations for two patients in February, 1908, to a group of buildings with accommodations for forty-one patients within a year.

On Christmas Day a very pretty celebration was arranged for the patients. A small club of ladies consisting of the following: Mrs. Carl Bonning, Mrs. Guy L. Kiefer, Mrs. A. E. Kiefer, Mrs. R. S. Melchers, Mrs. A. H. Steinbrecher, Mrs. William E. Henze, and Mrs. Morse Rohnert, made arrangements for the festive day. They provided an individual present for each patient, the women being furnished with woolen bonnets, the handiwork of the members of the club above referred to, and the men receiving heavy woolen mittens. A Christmas tree was nicely trimmed for the occasion and the administration building decorated with evergreens and holly. All of the decorations were donated by Mr. Samuel T. Douglas, President of the Board of Health, and many beautiful flowers were added to the decorations, the gift of the Tau Beta Alumnae Association. Grinnell Brothers loaned the use of a music box which added greatly to the pleasure of the day. A similar Christmas festival was arranged each year for several years and was under the supervision of the same group of women.

T. B. REPORTS COMPULSORY.

Besides these improvements at the Sanatorium, the work of the Prevention of Tuberculosis was given considerable aid this same year by an act of the State Legislature. A specific law was

passed declaring Tuberculosis an infectious disease and making it compulsory on the part of physicians to report the cases under their care together with certain necessary details to the Board of Health. This is a step decidedly in advance and one for which the Board of Health of Detroit together with the State Board of Health had labored for a long time.

Let us revert now to our Tuberculosis clinic. During the year ending June 30, 1909, four hundred and fifty-nine persons presented themselves to the clinic for examination and the total number of visits made to the clinic by all patients was 2,008.

During the first year of the existence of the Tuberculosis hospital one hundred and one patients were admitted and received attention. These were classified by Dr. Vaughan as follows: Early or incipient cases, 27; moderately advanced, 34; advanced 40. The patients remained in the hospital for periods varying from a few days to twenty-one weeks. In a report made by Dr. Vaughan during that year the cases and the results obtained were all tabulated and the conclusion as best expressed in his own words.

"From an examination of the above tables we see that among the first stage cases 24 out of the 26 patients remaining in the hospital for an interval of at least one week showed improvement in weight, this improvement in weight being in all cases accompanied by a corresponding improvement in their general condition. In other words 92.6 per cent. of the early stage cases did well during their hospital residence. Among the 34 cases classified as moderately advanced, 24 showed improvement in weight and general condition, a percentage of 70. Out of 40 advanced cases 17 showed improvement in weight and general condition during their hospital stay. In other words 42.5 per cent. of the advanced cases showed temporary improvement during their stay in the hospital.

"While it is too early to state whether the early and moderately advanced cases which have gained during their stay in the hospital have acquired a permanent arrest of their disease process, those individuals which have been under observation for from 3 to 4 months since their residence in the hospital have held the ground which they gained in a most satisfactory manner. Moreover these cases if they follow the instructions which have been given them during their stay in the hospital will cease to be sources of danger and infection to the community in which they live."

DR. VAUGHAN, T. B. PIONEER.

During the following year further improvements were made at the hospital and the capacity was enlarged to fifty-nine patients. The Red

Cross Society" donated a second cottage which was set aside for children and was the first hospital in Detroit to be used exclusively for tuberculous children.

Until July 1, 1909, Dr. V. C. Vaughan, Jr., was alone in this work, attending all patients at the clinic and at the hospital and making such house calls as were necessary at the homes of the clinic patients. All of this work was done at first without salary and subsequently for a small remuneration because of the great interest in his work and the admirable humanitarian character possessed by Detroit's pioneer tuberculosis expert. Now the duties had grown so manifold that they were beyond the grasp of one man and Dr. Guy H. McFall was appointed as an associate. Until this time the nursing service had been donated by the Visiting Nurse Association, but in 1909 an appropriation was allowed for the appointment of a nurse.

During the year ending June, 1910, 137 patients were admitted to the hospital and 30 cases remained from those admitted previously, making a total of 167 patients cared for during the year. Patients were admitted without any regard as to whether there was hope for their ultimate recovery or not, the only provision being that they could not enter unless there was room for their accommodation. They were classified as follows: Early stage, 35 cases; moderately advanced, 51; advanced, 81. Again quoting Dr. Vaughan's words as to results:

"The results obtained in the case of the early and moderately advanced cases are distinctly encouraging. Thus, out of 48 moderately advanced cases who remained in the hospital for a period above one week in duration, 44 showed material improvement in weight and general condition—a percentage of 90. Moreover out of 36 moderately advanced cases who had left the hospital during the present year, 20 are at present engaged in some form of labor, in other words 55.5 per cent. of the moderately advanced cases who have left the hospital are working and to a certain extent self supporting at present. With regard to the early cases, out of 35 patients remaining in the hospital for periods of one week or over, 32 showed improvements in weight and general condition, a percentage of 91.4. Among 33 early cases discharged from the hospital, 20 have been able to return to their work—a percentage of 78.7. The cases which returned to work after leaving the hospital are carefully followed at the clinic in order to see that they do not retrogress."

THE DIAGNOSTIC CLINIC.

During the following year the work continued with an enormous growth—702 patients made 6,020 visits to the clinic as compared with 533

patients who came 2,923 times the year previous. The number of nurses doing tuberculosis work was increased from one to three, and these nurses made 1,614 visits to homes of patients. During the year 249 patients were admitted to the hospital. In April, 1911, Dr. Vaughan inaugurated an extension of the work in what he termed a "Diagnostic Clinic." The regular clinics were being held daily, except Sundays, from 10:00 to 12:00 a. m. The diagnostic clinic was opened daily from 4:00 to 6:00 p. m. and was for the purpose of examining children not known to be tuberculous but of tuberculous parents. Dr. Vaughan's idea in choosing this hour was in order to obtain records of any elevation of temperature or acceleration of pulse which will manifest itself, if at all, at this time of the day. Moreover children could attend without interference with their school duties. Special tuberculin tests were employed, when necessary, to arrive at a certain diagnosis.

In a comparatively short time 80 children were examined and among them were discovered 40 children with undoubted tuberculous disease who were apparently in good health and who had manifested no symptoms at the time of examination, although definite physical signs of the disease were present. The importance of the detection of these cases is evident as it brings under observation early closed cases, a large proportion in fact, practically all of which, under proper care and attention, will be completely cured without ever becoming, at any stage, a source of danger to others. This is one of the most important phases of the work ever undertaken and it was due entirely to Dr. Vaughan's watchfulness and ever increasing interest in this subject.

CLINIC WORK ADVANCES.

During the year ending June 30, 1912, the number of beds available at the Board of Health Sanatorium was increased to 75. The work at the clinic further increased, the number of new persons examined during the year being 888, besides which there were 270 patients carried over from the previous year. The most striking fact in connection with the work of the Tuberculosis Clinic now is that so large a number of persons not suffering from the disease present themselves for examination. This is the very result that had been hoped for by Dr. Vaughan and he expressed it in his report of that year: "When you take into consideration both those that were found not tuberculous and those who could be classed as suspicious, we have a little more than half the entire number who presented themselves for examination at our clinic. This means that 264 persons who have been exposed to the disease and who had reason to suspect that they might have contracted it, sought instruction in

how to protect themselves against it and that 182 who had positively suspicious cases of tuberculosis will now become entirely well."

On September 3, 1912, The Nellie Leland School, an open air school for cases of closed tuberculosis, was opened. This school was erected by the Detroit Society for the Study and Prevention of Tuberculosis. The building was paid for by Mr. Frank B. Leland and was situated on ground purchased for the purpose and given rent free by the late Mr. J. L. Hudson. The Detroit Board of Education and the Detroit Board of Health co-operated with the Detroit Society for the Study and Prevention of Tuberculosis in the management of the school. The Society furnished the school and subsequently the provisions for the pupils, the Board of Education furnished the teacher and the Board of Health provided the physician and the nurse. Dr. V. C. Vaughan was the physician chosen by the Board of Health to take charge of this work. The pupils were carefully selected from diagnostic clinic and were admitted by Dr. Vaughan, who visited the school at least once a week to keep track of the physical condition of the children. In a report written at that time, Dr. Vaughan said:

"From a medical standpoint the School has proved a decided success and it is to be hoped that the beneficial results obtained will lead to the establishment of similar institutions in the near future, as at present we find it possible to take care of only a few of the cases which should be provided for in an institution of this sort."

The hope expressed in the above paragraph has been realized as a number of open air schools have been established. The year following the opening of the Nellie Leland School, brought an open air school in connection with the Tuberculosis Sanatorium of the Herman Kiefer Hospital and since then there have been added several open-air rooms or pavilions in connection with a number of the public schools of the city.

By July, 1913, the accommodations at the Hospital had increased to eighty-five beds and two additional Tuberculosis clinics had been established, one in the extreme western end of the city and the other in the northeastern section.

At this time my activity as Health Officer ended by resignation, but fortunately for the city, Dr. Vaughan was induced to continue as chief of the Tuberculosis Division of the Board of Health. The work has grown tremendously since then—the hospital now houses 170 patients and will soon accommodate 35 more, making a total of 205 on the old grounds. On the other hand an appropriation of \$1,000,000 is available for a fine, large Tuberculosis Farm, the grounds for which have been purchased near Northville. The number of clinics is growing constantly as is the number of physicians and nurses.

In 1917, Dr. Vaughan entered the Medical Service of the army but previous to that time a pretty romance occurred in connection with his work in The Department of Health. For several years previous to 1914, Miss Elsbeth Hosig was chief nurse of the Tuberculosis Division and as such was brought into daily association with the chief physician. She was his right hand support, as faithful in the performance of her duties as the doctor himself, deeply interested in his success and congenial as his co-worker. It was a natural consequence then perhaps, but a beautiful sequel, that Miss Elsbeth Hosig became Mrs. Victor C. Vaughan, Jr. His faithful and tireless co-worker became his cherished and devoted wife.

AN UNTIMELY END.

Unfortunately the brilliant career of Dr. Vaughan was cut short by his untimely death—June 4, 1919—when he was about to return from France to his native country, from army service to his life's work. The work of the Detroit Department of Health for the prevention of Tuberculosis will continue to progress, but it must never be forgotten that it will do so because of the solid foundation laid by Dr. V. C. Vaughan, Jr., a foundation so well planned and so carefully set that conditions can not change nor time efface it. His labors in behalf of the Tuberculous poor, painstaking, self-sacrificing, noble, will always remain as an inspiration to those who follow him. His beautiful character will never be forgotten. All honor to his memory!

STATUS LYMPHATICUS; ITS OCCURRENCE AND SIGNIFICANCE IN WAR NEUROSES.

The incidence of so-called status lymphaticus in soldiers with psychoneuroses is virtually twice that in wounded soldiers who did not develop a neurosis. This finding appears to indicate that in the etiology of the war neurosis, an endocrinal abnormality increases susceptibility to the neuro-

sis. It emphasizes the fact that in many, if not in all cases, strong etiologic factors are at work in the physiologic domain without minimizing the importance of factors that are psychical. Rather, it brings new proof, of a physical character, of the conception that, in the war neurosis, an initial weakness operative in the psychical field, is essential.

(Arch. of Neurol. & Psych., Oct., 1919, Davis).

The Journal

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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November

Editorials

CANCER.

What are we as a profession doing in regard to the cancer problem?

We recall a few years ago, yes quite a few years ago, that we had a Cancer Committee. We also remember that that Committee was formed at the instigation of Dr. J. H. Carstens. For some reason or other that Committee was discharged and the work it had begun remains unfinished. It is true that from time to time our attention has been called to the subject by the writings and discussions of Dr. Carstens but there our activity ceases. Why? Is Dr. Carstens alone to carry on, or are we going to rally to his support in the discussion of this subject, the dissemination of public information and the pursuit of a definite plan to combat the inroads that are made by cancer?

We now know that the persistent work of our Anti Tubercular Committees is producing results. The Anti-Tuberculosis movement is accomplishing definite results in lessening the

mortality rate of that increase. The same results can be secured by like effort directed toward the cancer problem.

We ask for volunteers who will consent to bring before our next meeting a definite plan of action. Will you volunteer to act on such a committee?

ORGANIZATION MISNAMED.

For seven years we have been preaching organization, earnestly and sincerely, not as a hobby but as a duty we felt we owed to the profession. We have seen increasing evidence each month, each year, of the need of compact medical organization that means more than payment of dues and occasional attendance at a society meeting. Organization that is constructive, organization that is productive, organization that is protective and organization that is combative for the rights of the profession as a whole and for the individual.

We have observed the complacency with which these "preachings" have been read or ignored. No real attention has been given to the warnings issued and no particular interest has been taken in the future that awaits the profession—a future that is filled with dire potentialities that will sweep aside, break down all that the years have wrought for us as doctors of medicine. We have, as an organization, complacently let the politician, manufacturer, corporation, insurance company, business man, community, county and state governing bodies tell us what we were or were not to do and only on rare occasions have we raised a voice in protest. We have quietly and true, with inward grumbling, acquiesced without making an effectual effort to protest or dictate in how so far we were to be dictated to.

If you doubt the last declaration, please tell us what was done to outline the profession's protection when the Compensation Law was enacted and the recent amendment passed to protect the doctor from the dictation of the Board or Insurance Adjusters for medical services? What protest was made when the narcotic tax was increased 300 per cent. for the

permission to scientifically prescribe opium and its derivatives? Who stood idly by while legislators and W. C. T. U.'s made it impossible to secure "undoctored" alcohol unless we filed bonds for which we paid a premium to insurance companies? What was done when an arbitrary ruling was made in regard to our income returns? And so we might continue for ample instances are on record where we have stood idly by and done nothing. And what is more, we seem content to remain in the same state of somnambulism and permit the imposition to continue.

And now there threatens state compulsory health insurance. If that act is adopted when introduced the very foundation of medicine will be invaded. When that time comes, if the physicians do not present a solid front and stand together in their demands for just standards and adequate remuneration, we will be caught between the two biggest forces in the state and crushed. Medical practice will be so lowered that eventually it will be impossible to practice honestly and live. The two forces are employer and labor—one seeking to keep the cost as low as possible; the other to demand the maximum of medical benefits.

Our salvation will depend upon how well we can organize for collective bargaining. Our only hope lies in organization and the use of that power to control the situation. Do you wonder we are concerned and view with alarm our past lethargy? When will the profession awake? Not until we do will we be able to dam back the force that surely threatens to submerge us.

As we headed this editorial, at present as an organization we are misnamed unless we concern ourselves with other problems than those purely scientific in character. Again we ask—are we awake or awakening? What are you going to do about it?

NOVEMBER ELEVENTH.

The rapid trend of events, the wonderful changes that are being wrought, the busy and crowded hours of the last twelve months have already enshrouded the war days in the first

hazy mists of the past. As we pause to reflect, the memories of a year ago appear to be enveloped in a haziness with indistinct minor details. Scarce can we believe that on November Eleventh, one year ago, the world's war terminated and hostilities ceased.

You who were home recall the frenzied event of American spirit that greeted the first peace headlines and the subsequent days of celebration as well as the silent "Thank God, Its Over," that you breathed when the truth of the news was verified.

You who were "Over There" require no word to recall your hesitating belief and emotion when the word was flashed along that November morning commanding hostilities to cease at eleven o'clock.

To all there will, no doubt, come a reminiscent hour on this November Eleventh, the first since hostilities ceased. And as you engage in your retrospective reflections on that day we make this request:

That as the hour of Eleven strikes on the Eleventh of this month, every doctor in Michigan, no matter where he may be, no matter what he is doing, even in the midst of an operation, pause in his work and in bowed silence pay our reverent tribute to those of our number who made the supreme sacrifice. Our Heroic Doctors kept the faith; we too must keep faith with them. Let other events be forgotten, let other memories fade and die but Doctors of Michigan, may the years be long before we in Michigan forget those of our number who went forth, as our representatives, but who now sleep on foreign soil. May we never be disloyal to their memory.

MEETING OF THE THIRTEENTH COUNCILOR DISTRICT.

On the evening of October 7th, we had the pleasure of being present at the meeting of the Thirteenth Councilor District held in the Fay-hall Hotel at Cheboygan.

After satisfying the demands of the inner-man at an excellent dinner, the attending members, twenty-five in number and representing

Alpena, Alcona, Antrim, Charlevoix, Cheboygan, Emmett and Presque Isle counties, proceeded immediately to the business of the meeting.

Following a short address of welcome by Dr. Tweedale, secretary of the Cheboygan County Society, most enjoyable papers were presented by Dr. Baker, our worthy president of the State Society, Dr. Van Leuven of Petoskey and Dr. Slemmons, of the State Health Commission.

One of the most noticeable features of the meeting was the intense interest and spirit manifested by these hustling members of the district in the real matters of organization and the furtherance of their common welfare. Dr. Parks, the Councilor for this district, is indeed fortunate in having the backing that was evidenced at this meeting and although certain parts of the district are not as efficiently organized as they should be, the spirit evinced by the attending members should soon overcome any lack in this direction.

Probably the crowning feature of the meeting, was the remarkable record made by Dr. Tweedale of the Cheboygan County Society, who in less than a month's time, by unstinted effort and application, brought the membership of his society from the disheartening number of two active members to include every physician in his county, registering 100 per cent. in membership for the meeting and attaining a record of which he may well be proud. This shows what can be done if the effort is there and Dr. Tweedale's work should be an incentive to EVERY county society secretary in the state.

We take this opportunity to express our appreciation of the efforts of Dr. Parks and Dr. Tweedale for the success being achieved in the organization of the Thirteenth.

THIRD SURVEY OF HOSPITALS.

The third survey of hospitals being made under the auspices of the American Medical Association is now well under way. Through an extensive correspondence and a third questionnaire the Association has collected a mass of information on the subject. Much of this ma-

terial has been tabulated and forwarded to committees in each state representing the state medical associations. Most of the state committees have arranged definite lines of action and by inspection of the hospitals or by other methods are securing first hand information by which the data collected by the Association is being carefully checked. The immediate end sought is to provide a reliable list of hospitals which are in position to furnish a satisfactory intern training. The investigation is not limited to intern hospitals, however, but will cover all institutions and the data obtained will be useful in any future action which may be taken in classifying hospitals. The work in Michigan is in charge of a committee of which Dr. George L. LeFevre, President, Board of Registration in Medicine, Muskegon, is Chairman, the other three members being Dr. Guy L. Connor, Member, Board of Registration in Medicine, Detroit, Dr. A. M. Hume, Owosso, and Dr. D. Emmett Welsh, Treasurer, Michigan State Medical Society, Grand Rapids. The closer relationship which the hospital now bears to the public in the community which it serves makes it all the more important that the service rendered by it shall be excellent in character.

DIVISION OF FEES.

The law published below was passed by the last legislature and is now effective. This act makes it a punishable offense to split fees. He who continues to pursue such a course becomes amendable to this law. It is to be urged that those who indulged in the practice will discontinue doing so.

Senate Bill No. 282. File No. 264.

Introduced by Senator Hayes.

State of Michigan

50th Legislature

Regular Session of 1919.

Senate enrolled Act. No. 69.

An act to prohibit the division of fees by physicians and surgeons and to provide a penalty for a violation of the provisions of this act.

The People of the State of Michigan enact:

Section 1. It shall be unlawful for any

physician or surgeon to divide fees with or to promise to pay a part of his fee to or pay a commission to any other physician or surgeon or person who calls him in consultation or sends patients to him for treatment or operation.

Section 2. Any physician or surgeon who pays or receives any money prohibited by this act shall be punished by a fine not to exceed one hundred dollars or imprisonment in the county jail not to exceed ninety days, or both such fine and imprisonment in the discretion of the court.

Section 3. In case a physician or surgeon shall be convicted of violating any of the provisions of this act the Board of Registration in Medicine, upon a first conviction may and upon a subsequent conviction shall, revoke the license of the person so convicted.

Editorial Comments

November with its Thanksgiving and first snow finds Michigan's doctors back into the harness of winter work and long hours. But in spite of the demands upon your time Doctor, arrange your work so that on the afternoon or evening that your society meets you will be in attendance. Pass along that tardy patient, who comes into your office just as you are starting for the meeting, until tomorrow. Be sure that emergency call is in reality an emergency. In fact you can not risk hiding behind a shallow excuse. Make up your mind to go and then go.

Are Industrial and Indemnity Insurance Companies attempting to dictate to you? If so discuss the problem at your next meeting. Of course you can't charge big fees for poor work, while on the other hand when you have done modern industrial surgery and exercised every skilled care you are entitled to your fees. There seems to be one trouble and that is that the incompetent do not realize that the end result determines the degree of skill that has been exercised.

It's the exceptional "Doc." who nowadays is content to travel by his "lonely." The better ones realize the need of society affiliation.

This gargle—

Quinine Sulphate or Bisulphate, grs. VI.

Thymol.

Ol. Menth Pip.

Ol. Wintergreen aa zi.

Aquae, gallons, one.

used undiluted and several times a day will be found most efficacious in preventing throat infections. It is particularly effective in clearing the mouth and throat of the pneumococcus. We have become personally familiar with its potency on several occasions and have witnessed its effect on three different occasions—the last one being where some nine hundred throat cultures before and after this gargle was used were studied. During the influenza epidemic last year those who faithfully used the gargle escaped infection and gave negative throat cultures. McCord has reported a series of laboratory investigations and demonstrates the effective bacterioidal properties of quinine whenever the pneumococci are the prevailing organisms. Try it this winter.

A serious problem confronting our hospitals, the profession and the public is the scarcity of students in our nursing training schools, as well as that of graduate trained nurses. The increasing demands of higher education incorporate the provision that students entering training schools must possess a high school certificate. The curriculum also insists upon a three year training course. To all of which we subscribe approval. We hold that a trained nurse must receive more than superficial instruction.

But we can not reconcile the waste of time in the first three or six months of the present curriculums of most of our training schools. The student nurse devotes from two to four months and in some instances six months as a probationer. In that period of her training her time is largely consumed in scrubbing bath rooms, tubs and toilets, and similar menial work. We venture to assert that such work is without a training course scope and may well be performed by paid help and the probationer's time occupied by other training duties, that will be of greater value to her and permit longer training in the basic and essential principles and practice of nursing. Serious consideration of this feature of our training schools should be given by those who direct our hospital schools.

And now comes "Mr. Grunter" who has been in the rut so long he can't keep up with the pro-

profession's progress, and all he does is to grunt and growl. Moral—your local County Society will enable you to escape "Mr. Grunter's fate of becoming a "has been."

Dr. Hugh Cabot of Boston has been elected professor of surgery in our University and head of the Surgical Department of the University hospital. This is the announcement made by the Regents during the past month. We sincerely hope that a generalized readjustment of policy and attitude will result so that some of the past and present abuses and imposition upon the profession of the State will be corrected. Yes, we realize we are touching a tender and sensitive spot—but unless that feeling is removed the near future is bound to bring a serious rupture between the profession and the University Medical Department.

"Old High Cost" continues in full health and vigor. Gee—but we wish somebody with a Dempsey wallop would come along and give him the count. The way paper, ink and labor continue to go up and increase our publication expense is causing us no little concern and worry. We are endeavoring to get along as well as possible and make no retrenchments.

Years ago, more or less, we were all boys—we mean boys in the accepted sense of tender years, two piece customs and ten cent hats. Back in the old swimming hole days there was always strife and differences about this thing, that thing and the other and naturally a scrap or two. Even now you can narrow down your eyes to a mere slit, lean back in your chair and squint through the tobacco smoke and see Jim with the chip on his shoulder. Then look about and "Jim" with his chip is visualized in your neighbor and competitor. In place of knocking the chip off and starting a modern row, go ask "Jim" at the first opportunity to accompany you to your next County meeting and cause the chip to fall unnoticed by the wayside. Now-a-days you can not afford to indulge in any "scraps." To many problems confronting demand co-operative solution. We bespeak the taking of an active part by all of our members in organization work.

"A good dinner takes the wrinkles out of both your tummy and your forehead."

When you patronize an advertiser you make it possible to send you a better Journal. When you secure a new advertiser you assure a larger and better Journal. Will you make the effort?

Simplicity—surely that is the very cornerstone of success in preparing for any vocation. Simplicity—it is so easy to get and yet so hard to hold to. Many of us realize its value way down in our hearts but somehow or other we so often forget it at the bedside, in the hospital and when we meet our fellows. We have started the thought, reader, now ponder over it.

Bricks that build walls of confidence—what are they? To be brief we are going to simply enumerate them: personal and office neatness and orderliness; care and attention to details and a patient's feelings and sentiment; abreastness and utilization of modern principles and practices; affiliation with and attendance at your local County and State Society; studiousness—the spending of a definite amount of time each day in reading and investigation—these are but a few of the bricks that tend to stabilize a wall of confidence for you in the community in which you reside. The more of these bricks that you acquire, added to others that will be apparent to you will surround you with a wall of confidence that assures contentment and happiness in your life.

Correspondence

September 27th, 1919.

Dr. F. C. Warnshuis,
Journal of Michigan State Medical Society,
Grand Rapids, Michigan.

Dear Doctor Warnshuis:

My attention has been called to an editorial comment in the Journal for September in which the inference is clearly drawn that I am an advocate of any kind of compulsory health insurance. Inasmuch as it would not have been difficult for you to have ascertained my views and you have chosen to draw your conclusions from a newspaper report, I rather resent the implication contained in your article.

That some kind of health insurance is highly desirable, as well as inevitable, I firmly believe. I rather think that it is desirable to make it compulsory. On the other hand, I quite agree that the ill-conceived legislation passed in a number of states recently is not going to be for the

good of the people and, not being good for the people in general, it will be detrimental to the interests of the medical profession. Mere opposition on the part of the medical profession to the general subject of health insurance is not going to accomplish very much except to lessen the chances of securing constructive legislation which will protect the interests of the medical profession and encourage the practice of better medicine.

A certain gentleman of antiquity, with full confidence in his own ability, once essayed to turn back the sea but, as I recall it, the net result of his adventure was a wet raiment—and no fish.

To raise the issues of "compulsion" and "bureaucracy" is only to employ the wiles of those who have long been the enemies of the medical profession and it ill befits us, to advance such bugaboos as arguments. Education is compulsory, obedience to law is compulsory and, to most of us who have to work for a living, work is compulsory, so why the fright at the word?

A good deal of the faulty legislation already enacted is due, in my opinion, to lack of information on the part of those who have made the laws. Would it not be most logical for the medical profession earnestly to endeavor to formulate and advocate such measures for health insurance as will result in the best service to the public and to the maintenance of the best traditions of medicine? In this way the doctors will be able to offer something in the way of a constructive program and not be subject to the accusation that they are members of a "trust" opposed to any form of interference with a "personal liberty" which takes no account of the rights or welfare of others so long as it remains undisturbed.

Very truly yours,

C. G. PARNALL, M.D.

Dear Sir:

I am instructed by the Cheboygan County Medical Society to notify the Medical Department of All Straight Life Insurance Companies that commencing with October 1, 1919, Five Dollars will be charged for each insurance examination made from \$1,000 to \$10,000.

All physicians of the county are members of the Society.

I remain,

Respectfully,

Dr. C. B. TWEEDALE, Secretary.

Deaths

Doctor Grace Clark, of Detroit, died following a brief illness with pneumonia.

Doctor Clark graduated from the medical department of the University of Michigan in 1902, since which time she has practiced her profession in Detroit. She was associated with Doctor Rhoda Farquharson and Doctor Mary Haskins in medical practice at the time of her death.

She is survived by her parents, Mr. and Mrs. W. A. Clark of Mayville, a brother, Stanton Clark, and a sister, Mrs. Gabriel Tuthill of Detroit.

State News Notes

COLLECTIONS.

Physicians' Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

Detroit College of Medicine and Surgery opened September 29th with a total enrollment of 150 students. Of these approximately 100 are residents of the City of Detroit, the others coming from various parts of the country. Their classification is as follows: Seniors 41, Juniors 52, Sophomores 17, Freshmen 33 and Special 7.

The Detroit Board of Education has enacted a ruling whereby students who have been for one year previous to matriculation residents of the City are released from the necessity of paying tuition. These resident students pay an annual fee of \$25.00 which is assumed to cover depreciation of the teaching plant and clinical fees in the various hospitals affiliated with the College. The non resident students pay an annual fee of \$150.00 which covers all expenses.

At a recent meeting of the Faculty action was taken lengthening the college course to five years by requiring one year of internship or research or teaching before the degree of Doctor of Medicine is conferred. This applies to the Freshman class of 1919-20 and has been confirmed by the approval of the Board of Education.

The teaching staff of the College is very complete and has been carefully selected, there being at present more than twenty names on the College payroll, exclusive, of course, of janitors. Dr. C. F. McClintic, late of the University of Cin-

cinnati, has been employed to take charge of the Department of Anatomy, Histology and Embryology and Dr. A. R. Grierson, also of Cincinnati, has been employed as Dr. McClintic's assistant in this department. The growth and development of the Department of Pathology and Bacteriology during the past year under the supervision and control of Dr. James E. Davis leaves nothing to be desired. The other pre-clinical departments are named as heretofore and no change in the staff personnel of these departments is at present contemplated though additional teachers will be appointed from time to time as the need for them develops.

Extensive additions in the way of teaching and research equipment have been made in all the laboratories, thanks to the liberality of the Board of Education and of the Civic Administration of the City of Detroit, so that in these respects the College is unusually well provided for. The present relations of the College with its affiliated hospitals are very satisfactory. A teaching schedule has been arranged whereby the Senior class is divided into sections of appropriate size which receive their clinical instruction in the general hospitals, one group in each hospital. By this means overcrowding and too rapid hospital rotation are avoided, the students remain longer in the hospitals and no hospital is overburdened.

So far as entrance and promotion standards are concerned the College prides itself on the care with which credentials are evaluated and the rules suggested by the Council and the State Board are administered. At the present time no conditioned students are admitted either to the Freshman class or to advanced standing and no student is admitted to advance standing who cannot produce a certificate from the authorities of the school whence he comes authorizing his re-registration in that school with the same classification he asks of the Detroit College of Medicine and Surgery. Furthermore, no students are received from other than Class A medical schools and no premedical colleges are recognized excepting those on the acceptable list of the Council on Medical Education of the American Medical Association. It is hoped that a careful adherence to these standards will assure the College the approval of the various standardizing agencies in relation with which it comes.

Dr. John Bell, retiring President of the Wayne County Medical Society, gave the President's Annual Address, Monday evening, September

22nd, at Medical Bldg., Detroit. Among many things, he mentioned the following:

1. Two hundred members of this Society have been away serving Our Country.
2. There was only one death, Dr. V. C. Vaughan, Jr.
3. Approximately 115 new members have joined our Society during the past year.
4. The average attendance of the weekly meetings was about 112.
5. A permanent memorial tablet to those who were in service should be placed in our Club Rooms.
6. Attention should be given to the matter of securing more hospital beds in Detroit.
7. A large Municipal Hospital should be built at once, to be placed under the control of a hospital commission.
8. There is still an indebtedness of \$7,000 on our property.

The Detroit Academy of Medicine held its annual meeting at the Country Club on Tuesday evening, October 14th. The following officers were elected: President, Dr. Ray Connor; Vice President, Dr. W. H. Morley and Secretary-Treasurer, Dr. Walter Manton. The retiring President, Dr. C. G. Jennings gave an interesting talk on Medical Education in Detroit. Preceding the meeting the Fellows of the Academy were entertained at dinner by Dr. Jennings.

The Michigan State Board of Registration in Medicine held its meeting in Lansing on October 15th. The following officers were elected for the ensuing two years: President, Dr. George LeFevre and Secretary Dr. B. D. Harison. All the members of the Board were present.

Dr. R. Parmeter has been appointed chief surgeon, Dr. Bruce Lockwood chief physician and Dr. William Bailey, formerly of Lakeside Hospital Cleveland Supt. at the Detroit Receiving Hospital.

With urgent need for more hospital accommodations the Wayne County Medical Society have appealed for the use of the Ford Hospital which has recently been relinquished by the government.

Dr. R. C. Stone announces his return from service overseas and the reopening of his offices at 618-19-20 Post Building, Battle Creek, Michigan, for the practice of surgery.

At the present time, the Detroit Receiving Hospital has 150 beds, with an addition of 250 beds in course of construction. This addition will be opened next summer.

County Secretaries are requested to send in reports of their meetings for publication. May we not have a full report of every meeting that is held?

Dr. Stewart Hamilton has recently been appointed a member of the Detroit Poor Commission. He succeeds Dr. Stanley Miner.

The Detroit Receiving Hospital has 6 internes, 38 nurses and a resident physician in medicine and one in surgery.

Dr. Eugene Miller was elected a Director, and Dr. A. H. Rockwell President of the newly organized Michigan Health Association.

Dr. W. S. Osborn and Miss Lela E. Terry of Detroit were married September 10th, and now reside at 115 Linsdale Ave., Detroit.

Dr. Victor Ryan of Escanaba has located in Detroit and is engaged by Dodge Brothers in their new hospital.

The Herman Kiefer hospital of Detroit has opened a maternity department under the direction of Dr. W. P. Manton.

Kalamazoo physicians are reported as having increased their fees to \$3.00 and \$4.00 for day and night calls.

Dr. W. A. Grant of Lyons has sold his practice to Dr. Fullenwider of Detroit.

Dr. M. L. Cushman of Lansing has resumed practice after eight months overseas service.

The Michigan Trudeau Society met in Kalamazoo, October 8th.

Kent, Ottawa and Barry counties will hold a meeting in Grand Rapids on November 26th.

Dr. James B. Quick has located in Laurium.

Dr. F. F. McMillan has located in Charlevoix.

Dr. W. J. Kane has located in Mt. Clemens.

Dr. W. P. Morrill of Benton Harbor has returned after over two years of military service.

Dr. Frank Sarazin has located in Houghton.

Dr. E. H. Grover has located in Baroda.

Dr. J. S. Craig has been elected full-time health officer of Ishpeming.

Dr. A. D. Sharp has located in Albion.

The Tri-State Medical Society will meet in Kalamazoo, November 3rd.

Port Huron has established a dental clinic in its public schools.

COUNTY SOCIETY NEWS

It is the Editor's desire to have this department of the Journal contain the report of every meeting that is held by a Local Society. Secretaries and urged to send in these reports promptly

CHEBOYGAN COUNTY.

A meeting of the medical men was held at my office last night. The following was accomplished:

Officers elected:

President—Dr. A. M. Gerow.

Vice President—Dr. W. F. Reed.

Secretary-Treasurer—Dr. C. B. Tweedale.

Constitution and by-laws to be printed. Fee bill revised, to be printed and signed. Every physician in the city a member (nine). Two members secured for state society, and others

will follow. Five men in the county elected provisionally, (on payment of their dues).

TRI-COUNTY.

At the regular meeting of the Tri-County Medical Society held Oct. 3rd the following officers were elected:

President—C. E. Miller, M.D.

Vice-President—E. B. Babcock, M.D.

Second Vice-President—E. A. McManus, M.D.

Secretary and Treasurer—W. Joe Smith.

Delegate to State Convention—G. D. Miller, M.D.

Alternate—S. C. Moore, M.D.

Dr. Gruber also announced his intention of moving from Mesick to Cadillac. He recently returned from overseas service.

WAYNE COUNTY MEDICAL SOCIETY.

Officers and Committees for 1919-1920.

President—Dr. George E. McKean, 1515 David Whitney Bldg., Cherry 2661.

Vice-President—Dr. Raymond C. Andries, 641 David Whitney Bldg. Cherry 694.

Secretary—Dr. J. H. Dempster, 502 Fine Arts Bldg. Cherry 2012.

Treasurer—Dr. Wm. H. Morley, 33 East High St. Main 3778.

Trustees.

Dr. A. D. Holmes (1 year), Chairman, 1745 East Jefferson Ave. Edgewood 1473.

Dr. Angus McLean (2 years), 641 David Whitney Bldg. Cherry 694.

Dr. Frank B. Walker (3 years), 1229 David Whitney Bldg. Cherry 1120.

Dr. Walter J. Wilson, Jr. (4 years), 509 David Whitney Bldg. Cherry 5193.

Dr. Warren L. Babcock (5 years), The Grace Hospital. Glendale 90.

(Dr. J. H. Dempster, Secretary Board of Trustees).

Surgical Section.

Dr. James D. Matthews, Chairman, 948 David Whitney Bldg. Main 777.

Dr. E. G. Martin, Secretary, 1447 David Whitney Bldg. Cadillac 4675.

Medical Section.

Dr. Herbert M. Rich, Chairman, 1337 David Whitney Bldg. Main 1090.

Dr. E. W. Caster, Secretary, 3004 Woodward Ave. Hemlock 2280.

Book Reviews

"WHAT WE KNOW ABOUT CANCER." A Hand-book for the Medical Profession. Prepared by a committee of the American Society for the Control of Cancer, American Medical Associated Press, Chicago, 1918.

The American Society for the Control of Cancer has been in existence and working effectively for a number of years. The sole object of the Society, at present at least, is the "dissemination of facts in regard to cancer to the end that its mortality may be reduced by a wider knowledge of the disease."

The effort represented by the present pamphlet has perhaps the most far reaching possibilities

for good of any single attempt to lessen cancer mortality undertaken in this country.

It is no longer necessary to argue the point that delay is the one great factor in cancer mortality. At least four-fifths of cancer deaths could be prevented by early recognition. The conditions necessary for recognition of cancer in ample time for cure are not ideal but distinctly practicable. Public education is one important pathway of improvement, but education of the medical profession itself is of equal if not greater importance. Statistical studies have shown that in the majority of cases the doctor has had the cancer patient, "under observation" over a year before efficient curative treatment is instituted. It is needless to state that during this year the majority of cases have changed from curable to incurable. As the pamphlet itself somewhat mildly puts it, "The conditions call for a far keener appreciation of responsibility for the mortality from cancer than now generally exists in the medical profession."

It is not possible here to abstract this pamphlet which is already so condensed. The general facts concerning cancer are outlined and then each important type and site of cancer is taken up in detail and the forms, symptoms, standard treatment, and results to be expected are outlined for each type.

The chief point we would make here is that if every medical man would study and seriously apply the teaching in this pamphlet, which he can read in an hour, the question of delay in cancer would be solved in so far as it is referable to the medical profession. The ultimate possible good obtainable from the wide spread dissemination of this pamphlet is so great that we would urge every possible means to get it into the hands of as many medical men of all classes as possible. It can be had from the American Medical Association, 535 N. Dearborn St., Chicago, for 10 cents. If you are a trained surgeon get it. It will interest you. If you are further afield get it and study and apply it. If you feel misgivings that some of your cases in the past might have been saved had you been more sure and acted more promptly (and who of us does not have such misgivings) get it. It will help you in future cases.

We would especially beg the assistance of Boards of Health, both state and municipal and of medical societies in distributing the pamphlet. It can be bought cheaper in quantities and sent out with your other mail matter with almost

no extra cost or trouble. When such a simple means for such far reaching good is in our hands it is a pity to let it lie neglected.

Miscellany

ACTION OF CERTAIN DRUGS ON THE BRAIN CIRCULATION IN MAN.

1. Amyl nitrate causes a marked dilation of the brain vessels.
2. Epinephrin induces a primary constriction of the brain vessels which is followed by a marked dilation.
3. Caffein produces no demonstrable change in the dosage employed.
4. Pituitary extract is followed by a dilation of the brain vessels, accompanied by a distinct 'leukoreaction.'

(Arch. of Neurol. & Psych. Oct., 1919. Ræphael and Stanton).

A STUDY OF HYSTERIA, OBSERVED IN THE U. S. ARMY HOSPITAL, PLATTSBURG, N. Y.

1. Hysteria is purely functional in its nature and the mechanisms underlying its manifestations are entirely mental.
2. The causes to which patients attribute their hysterical symptoms are obviously and absurdly inadequate.
3. It is a mistake to think that hysterical manifestations are an integral and necessary part of the emotional syndrome; they can appear independently of all emotion; and the emotional syndrome has nothing in common with hysteria.
4. Psychic factors to which war neuroses in general have been attributed—fright caused by danger from projectiles, horrifying sights, etc., play a part only in the acute emotional syndrome; hysterical phenomena are not directly produced by them.
5. Those disorders which develop at the front and are in the direct expression of violent emotion are never of long duration; the intensity of their manifestations subsides rapidly and almost all cases can return to the front within a few days.
6. Speaking with special reference to my experience, the mainspring of hysterical conduct consists in a concealed, illicit, morally untenable motive.
7. Its most frequent variations are: (a) To evade the law of conscription, (b) To procure

rejection for physical unfitness, (c) To evade dangerous, disagreeable, or difficult duty, or to evade all duty, (d) To procure the ease and privileges of hospital care, (e) To procure discharge on certificate of disability, (f) To procure compensation for disability.

8. Illicit motive and it alone is the factor which actuates hysterical conduct.

9. Statements which have been made to the effect that war neuroses had not been observed in previous wars in such large numbers are probably not in accord with facts.

10. The factors to which patients themselves attribute cures are apt to be trivial and inadequate.

11. According to my experience, the particular method of therapy is a matter of comparatively little importance.

12. In cures the following factors are frequently seen to be operative: (a) Medical officers impressing patients in such a way as to preclude any hope of successful imposition, (b) Demonstration of the unreal nature of the disability, (c) Strict discipline as opposed to sympathy, coddling or humoring, (d) Painful or otherwise disagreeable treatment, (e) Removal of motive by change of situation.

13. Many spontaneous cures occurred in previously refractory cases, en route to the United States and later on the signing of the armistice.

14. Among circumstances contributing to the prevalence of war hysteria is gullibility of the medical profession.

15. Military law places medical officers in a difficult position. They must either designate the disability by some respectable name, such as hysteria or psychoneurosis, or make a diagnosis of malingering and have to prove criminal intent.

16. All are agreed as to there being a close similarity in the clinical manifestations of hysteria and malingering and as to there being great difficulty in practice of establishing the differentiation.

17. A search through the literature reveals but one point to which the differentiation is generally fastened; namely, conscious or unconscious quality of the motivation.

18. My own experience and study lead me to the conclusion that what some have described under the name of hysteria and what others have described under the name of malingering are one and the same thing. The difference seems to be entirely one of point of view.

19. War experience has shown that hysterical manifestations can be actuated by motives other than sexual.

20. The essential feature of the hysterical personality seems to consist in a character defect.

21. I would banish from medical classification such euphemisms as 'hysteria,' 'shell shock,' 'traumatic neurosis,' etc. and would also banish the expression 'malingering' with its implication of crime for which the responsibility is entirely on the patient.

22. I would designate, instead, the cases in question by the term constitutional psychopathic state, simulation.

23. The cases classed under the heading of neurasthenia may be roughly divided into two groups. The first represents a condition allied to the manic-depressive psychoses; the second is characterized by vague general hypochondriasis, may often be shown to be motivated exactly in the manner of ordinary hysterical manifestations and is, to my mind, but a special type of hysteria or simulation.

24. My experience has amply shown that the possession of native intelligence far above the average and good educational and social opportunities are not incompatible with hysterical character defect and with gross lack of moral sentiment.

25. These cases show what remarkable stability a normal neuropsychic constitution has and how inadequate etiologically, in the absence of a neuropathic predisposition, are the factors to which psychoses and psychoneuroses are so often attributed.

(Arch. of Neurol. & Psych., Oct., 1919, Rosanoff).

The Futility of Bridging Nerve Defects by Means of Nerve Flaps. By Byron Stookey, A.M., M.D., Maj., A.M.C. Surg., Gyn. and Obst., CVol. XXIX, September, 1919, No. 3.

1. The repair of nerve defects by means of nerve flaps has not been definitely supported clinically, as evidenced by a critical study of the reported cases.

2. Experimentally it has been shown that nerve flaps do not serve as conducting paths for the down growing neuraxes.

3. Nerve flaps whether central or peripheral are merely degenerated partial nerve segments. Continuity and union of neuraxes does not take place at point of suture.

4. To avoid fallacious deductions it is important to distinguish between the level of the injury to the nerve trunk and the level at which muscular branches arise.

5. Abnormal communicating branches are not rare, particularly between the median and ulnar. Such anomalies must be taken into consideration in any careful study of nerve injuries.

6. Judging from the level of the lesions, muscles may not be presumed paralyzed but should be demonstrated paralyzed.

7. Total movements may not be offered as evidence of return of function. The action of individual muscles must be given.

8. Reports of peripheral nerve injuries, to be of value, must be accompanied by motor, sensory and electrical findings.

9. By the formation of nerve flaps from the central stump a portion of the nerve from which neuraxes must grow is removed. Distal as well as central flaps may sever muscular branches. By reversing the flaps they are taken out of their field. Thus the downgoing neuraxes are prevented from reaching the muscles through these muscular branches, even were regeneration to take place.

10. The nerve flap method to bridge nerve defects should be discarded in peripheral nerve surgery.

(Leo C. Donnelly, Detroit.)

Restoria.—"Restoria for Bad Blood" is sold by the Restoria Chemical Company of Kansas City, Mo. It is sold as a sure cure for syphilis, but is also recommended for rheumatism, kidney trouble, lumbago, eczema and catarrh. The A. M. A. Chemical Laboratory reports that Restoria contains no mercury or arsenic but does contain iodid, probably as potassium iodid, equivalent to 1.693 gm. per hundred Cc. It also was found to contain much vegetable extractive, some alkaloidal drug and a bitter oil or oleoresin (*Jour. A.M.A.*, Aug. 9, 1919, p. 438).

**Don't Fail
to
Attend your Society Meetings
regularly.**

**You CAN NOT afford
to miss them.**

**That
Means
YOU**